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CENTRAL SUPPLY CO.

Indianapolis.

DEALERS IN

STEAM, GAS AND WATER  
SUPPLIES

PIPE FITTINGS AND VALVES, MILL AND  
WATER WORKS SUPPLIES, HOUSE  
HEATING GOODS AND TOOLS

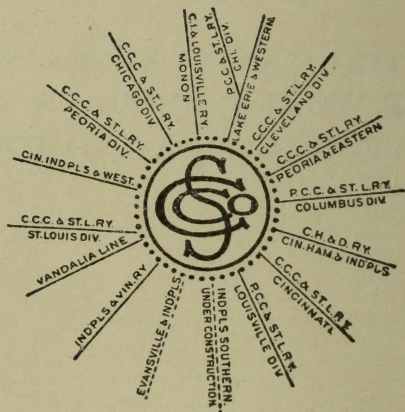
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CATALOGUE B

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INDIANAPOLIS, INDIANA  
209-217 WEST WASHINGTON ST.





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## *TERMS*

Discount sheets will be furnished the trade and are subject to change without notice.

No claims for allowance will be entertained unless presented on receipt of goods; neither will we hold ourselves responsible for breakages after goods are delivered in good condition to the transportation company.

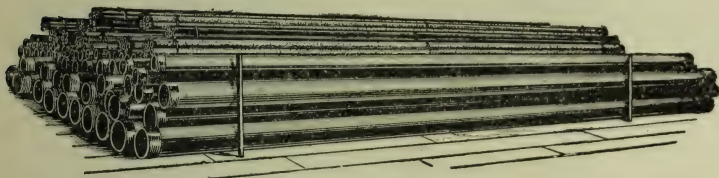
No credit will be made for goods returned unless special arrangement is made prior to shipment, and consignor's name and address must be plainly written on shipping tag.

Orders from strangers or parties unknown to us and having no commercial rating, must be accompanied by cash or satisfactory references.

In making reference to any of our goods, either for the purpose of inquiry or in orders, always refer to catalogue figure number.

## STANDARD STEAM, GAS, AND WATER PIPE

## BLACK AND GALVANIZED



B1

Size, Inches	Price Black or Galvanized per Foot	Actual Outside Diameter, Inches	Thickness, Inches	Nominal Weight per Foot, Pounds	Number of Threads per Inch of Screw
$\frac{1}{8}$	.05 $\frac{1}{2}$	.40	.068	.24	27
$\frac{1}{4}$	.05 $\frac{1}{2}$	.54	.088	.42	18
$\frac{3}{8}$	.05 $\frac{1}{2}$	.67	.091	.56	18
$\frac{1}{2}$	.08 $\frac{1}{2}$	.84	.109	.84	14
$\frac{3}{4}$	.11 $\frac{1}{2}$	1.05	.113	1.12	14
1	.16 $\frac{1}{2}$	1.31	.134	1.67	11 $\frac{1}{2}$
1 $\frac{1}{4}$	.22 $\frac{1}{2}$	1.66	.140	2.24	11 $\frac{1}{2}$
1 $\frac{1}{2}$	.27	1.90	.145	2.68	11 $\frac{1}{2}$
2	.36	2.37	.154	3.61	11 $\frac{1}{2}$
2 $\frac{1}{2}$	.57 $\frac{1}{2}$	2.87	.204	5.74	8
3	.75 $\frac{1}{2}$	3.50	.217	7.54	8
3 $\frac{1}{2}$	.95	4.00	.226	9.00	8
4	1.08	4.50	.237	10.66	8
4 $\frac{1}{2}$	1.30	5.00	.246	12.49	8
5	1.45	5.56	.259	14.50	8
6	1.88	6.62	.280	18.76	8
7	2.35	7.62	.301	23.27	8
8	2.82	8.62	.322	28.18	8
9	3.40	9.62	.344	33.70	8
10	4.25	10.75	.366	40.00	8
11	4.75	11.75	.375	45.00	8
12	5.20	12.75	.375	49.00	S

Unless otherwise ordered, black pipe, random lengths, with threads and couplings, will be shipped.

For cut lengths, an extra charge will be made above random lengths.

For pipe smoothed on the inside, known as plugged and reamed, an extra charge will be made above regular pipe.

For galvanized pipe, an extra charge will be made above black.

For asphalted pipe, an extra charge will be made above black.

Diagrams Showing Approximate Thickness and Diameters of  $\frac{3}{4}$ -Inch Pipe

STANDARD



EXTRA HEAVY



DOUBLE EXTRA HEAVY



It will be seen by above that the actual outside diameter of Standard, Extra Heavy and Double Extra Heavy pipe is the same the extra thickness of metal reducing the internal diameter—so that the same sizes of dies and fittings fit either thickness of pipe.

Lists on this page adopted February 15, 1900.

### LARGE OUTSIDE DIAMETER PIPE.—Plain Ends—Per Foot

O. D. In.	$\frac{1}{4}$ Inch Thick	$\frac{3}{16}$ Inch Thick	$\frac{1}{2}$ Inch Thick	$\frac{3}{4}$ Inch Thick	O. D. In.	$\frac{1}{4}$ Inch Thick	$\frac{3}{16}$ Inch Thick	$\frac{1}{2}$ Inch Thick	$\frac{3}{4}$ Inch Thick
14	3.85	4.80	5.75	6.65	21	7.25	8.65	10.10	11.50
15	4.15	5.15	6.15	7.15	22	7.60	9.10	10.60	12.10
16	4.40	5.50	6.60	7.65	24	.....	9.95	11.60	13.15
17	4.70	5.85	7.00	8.15	26	.....	11.30	13.15	14.95
18	4.95	6.20	7.40	8.60	28	.....	12.15	14.15	16.15
20	5.50	6.90	8.25	9.60	30	.....	.....	15.20	17.65

O. D. Pipe shipped in random lengths, plain ends unless otherwise ordered.  
Extra charge for threading.

### EXTRA STRONG WROUGHT PIPE

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2
Price.....per foot	.11	.11	.11	.12	.15
Actual Outside Diameter.....inches	.405	.540	.675	.840	1.05
Nominal Inside Diameter... "	.205	.294	.421	.542	.736
Thickness..... "	.1	.123	.127	.149	.157
Nominal Weight per foot....pounds	.29	.54	.74	1.09	1.39

Size.....inches	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Price.....per foot	.3	.36	.50	.81	1.05
Actual Outside Diameter.....inches	1.66	1.9	2.375	2.875	3.5
Nominal Inside Diameter... "	1.272	1.494	1.933	2.315	2.892
Thickness..... "	.194	.203	.221	.28	.304
Nominal Weight per foot....pounds	3.	3.63	5.02	7.67	10.25

Size.....inches	4	4 $\frac{1}{2}$	5	6	7
Price.....per foot	1.5	1.95	2.16	2.90	3.80
Actual Outside Diameter.....inches	4.5	5.	5.563	6.625	7.625
Nominal Inside Diameter... "	3.818	4.28	4.813	5.75	6.625
Thickness..... "	.341	.36	.375	.437	.5
Nominal Weight per foot....pounds	14.97	18.22	20.54	28.58	37.67

### DOUBLE EXTRA STRONG WROUGHT PIPE

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$
Price.....per foot	.25	.30	.37	.52	.65
Actual Outside Diameter.....inches	.84	1.05	1.315	1.66	1.9
Nominal Inside Diameter... "	.244	.422	.587	.885	1.088
Thickness..... "	.298	.314	.364	.388	.406
Nominal Weight per foot....pounds	1.7	2.44	3.65	5.2	6.4

Size.....inches	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
Price.....per foot	.95	1.37	1.92	2.45	2.85
Actual Outside Diameter...inches	2.375	2.875	3.5	4.	4.5
Nominal Inside Diameter... "	1.491	1.755	2.284	2.716	3.136
Thickness..... "	.442	.56	.608	.642	.682
Nominal Weight per foot....pounds	9.02	13.68	18.56	22.75	27.48

Size.....inches	4 $\frac{1}{2}$	5	6	7	8
Price.....per foot	3.30	3.80	5.30	6.25	7.20
Actual Outside Diameter.....inches	5.	5.563	6.625	7.625	8.625
Nominal Inside Diameter... "	3.564	4.063	4.875	5.875	6.875
Thickness..... "	.718	.75	.875	.875	.875
Nominal Weight per foot....pounds	32.53	38.12	53.11	62.38	71.62

Extra Strong and Double Extra Strong will be shipped in random lengths and plain ends, unless otherwise ordered.

For pipe fitted with threads and couplings an extra charge will be made above regular.

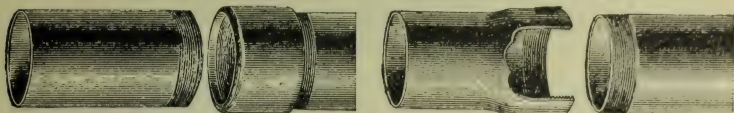
For cut lengths an extra charge will be made above random. Also charge for labor cutting.

For galvanized or asphalted an extra charge will be made above black.

Extra heavy or hydraulic tubes, away from standard, special prices given on application.



## †INSERTED JOINT



B3

Nom. Inside Diam. Inches	Actual O'tside Diam. Inches	Price per Foot	Nom. Weight per Ft. Pounds	No. Th'ds. per In. Screw	Nom. Inside Diam. Inches	Actual O'tside Diam. Inches	Price per Foot	Nom. Weight per Ft. Pounds	Number Threads per Inch Screw
2	2¼	.23	2.22	14	5⅝	6	1.05	10.46	14
2¼	2½	.29	2.82	14	5⅝	6	1.20	12.04	11½
2½	2¾	.32	3.13	14	5⅝	6	1.40	14.20	11⅝
2¾	3	.35	3.45	14	5⅝	6	1.60	16.70	11⅝
3	3¼	.41	4.10	14	6¼	6⅞	1.16	11.58	14
3¼	3½	.45	4.45	14	6¼	6⅞	1.35	13.32	14*
3½	3¾	.48	4.78	14	6¼	6⅞	1.70	17.02	11½
3¾	4	.56	5.56	14	6⅞	7	1.24	12.34	14
4	4¼	.60	6.00	14	6⅞	7	1.75	17.51	10*
4¼	4½	.64	6.36	14	7¼	7⅞	1.36	13.55	14
4½	4¾	1.00	9.38	14	7⅞	8	1.55	15.41	11½
4¾	4¾	.68	6.73	14	7⅞	8	2.10	20.17	11½
4¾	4¾	1.00	9.39	14	8¼	8⅞	1.61	16.07	11½
4¾	5	.78	7.80	14	8¼	8⅞	2.00	20.10	11½
5	5¼	.82	8.20	14	8¼	8⅞	2.40	24.38	8*
5	5¼	1.00	9.86	14	8⅞	9	1.76	17.60	11½
5	5½	1.30	12.80	11½	9⅞	10	2.20	21.90	11½
5	5¼	1.50	15.88	11½	10⅞	11	2.68	26.72	11½
5	5½	.87	8.62	14	11⅞	12	3.05	30.35	11½
5⅝	5½	1.30	12.49	11½	12½	13	3.38	33.78	11½

\*Also made 11½ thread. †Inserted Joint made to order.

List adopted February 15, 1900.

O'tside Diam. Inches	Price per Foot	THICKNESS		Nom. Weight per Ft.	O'tside Diam. Inches	Price per Foot	THICKNESS		Nom. Weight per Ft.
		Inches	Nearest B. W. G.				Inches	Nearest B. W. G.	
1	.30	.095	13	.90	3	.35	.109	12	3.33
1¼	.28	.095	13	1.15	3¼	.40	.120	11	3.96
1½	.27	.095	13	1.40	3½	.44	.120	11	4.28
1¾	.22	.095	13	1.66	3¾	.50	.120	11	4.60
2	.20	.095	13	1.91	4	.55	.134	10	5.47
2¼	.24	.095	13	2.16	4½	.62	.134	10	6.17
2½	.28	.109	12	2.75	5	.75	.148	9	7.58
2¾	.34	.109	12	3.04	6	1.00	.165	8	10.16

Tubes more than four wire gauges heavier than standard will be charged by the pound, the same as plain end stay tubes, arch pipes, and water grates.

are same list prices and dimensions as above.

**DRIVE PIPE, LINE PIPE AND TUBING****B4**

For Gas, Oil and Water Wells, Quoted on Application

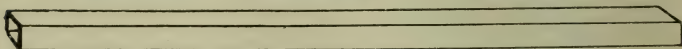
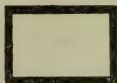
**PLUGGED AND REAMED GALVANIZED PIPE**

For Tubular Well Purposes

2, 2½, 3, 3½, and 4 inch sizes at approximately 10 per cent additional over price of regular Standard or Merchant Galvanized Pipe.

**SPECIAL STEEL TUBING**

Welded and Drawn

**B5 SQUARE****B6 RECTANGULAR****B7 ROUND**

For use in machinery construction, etc. Prices on application. State outside dimensions, thickness of metal and quantity wanted.

**PIPE AND TUBE TRADE CUSTOMS**

Every piece of pipe, tubing, casing, boiler tubing, line pipe and drive pipe is carefully tested, but as it is impossible to always detect imperfections, the only guarantee that is given is to replace such goods as prove defective. Under no circumstances is the seller responsible for any damages beyond the price of the goods. No charges for labor or expenses required to repair defective goods or occasioned by them will be allowed. If the goods are defective, the measure of damages is the price of the defective pieces.

Claims for shortage or deductions for erroneous charges must be promptly presented or will not be allowed.

The outside diameter of goods heavier than "standard" is the same as standard, the extra thickness being on the inside, so that the different weights of the same size use the same coupling.

Special goods made to specification, where buyer is to inspect, must be inspected and accepted before shipment is made. After shipment is made our responsibility ceases.

# SHELBY COLD DRAWN SEAMLESS STEEL TUBING

List adopted February 15, 1900.

Although the following list of prices does not cover tubes smaller than  $\frac{3}{16}$ " O. D., we can furnish tubes as small as  $\frac{1}{100}$ " O. D., which are quoted at net prices.

Thickness B. W. G. and Fractions	Equivalent in Decimal of inch	PRICE PER FOOT						Thickness B. W. G. and Fractions	Equivalent in Decimal of inch	PRICE PER FOOT					
		OUTSIDE DIAMETER INCHES								OUTSIDE DIAMETER INCHES					
		$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$			$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$
26	.018	.25	.25	.25	.27	.28	.29	20	.035	.25	.25	.25	.27	.28	.30
25	.020	.25	.25	.25	.27	.28	.29	19	.042	.26	.26	.26	.28	.29	.31
24	.022	.25	.25	.25	.27	.28	.29	18	.049	.27	.27	.27	.29	.30	.32
23	.025	.25	.25	.25	.27	.28	.29	17	.058	.28	.28	.28	.30	.31	.33
22	.028	.25	.25	.25	.27	.28	.29	16	.065	.30	.30	.30	.32	.33	.35
21	.032	.25	.25	.25	.27	.28	.29	...	.....	.....	.....	.....	.....	.....	...

Thickness B. W. G. and Fractions	Equivalent in Decimal of inch	PRICE PER FOOT. OUTSIDE DIAMETER INCHES											
		$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	
22	.028	.30	.33	.36	.38	.40	.42	.44	....	....	....	....	
21	.032	.30	.33	.36	.38	.40	.42	.44	....	....	....	....	
20	.035	.31	.34	.38	.39	.41	.43	.46	.49	.52	....	....	
19	.042	.31	.35	.38	.40	.42	.45	.48	.52	.55	....	....	
18	.049	.32	.36	.39	.42	.44	.48	.51	.55	.60	....	....	
17	.058	.33	.37	.41	.44	.47	.51	.55	.60	.65	....	....	
16	.065	.35	.39	.43	.47	.50	.55	.60	.65	.70	.94	1.04	
15	.072	.37	.41	.45	.49	.54	.59	.64	.70	.75	.97	1.07	
14	.083	.38	.43	.48	.52	.57	.63	.69	.75	.81	1.00	1.10	
13	.095	.40	.45	.50	.55	.62	.68	.75	.81	.88	1.08	1.18	
12	.109	.42	.48	.54	.59	.66	.73	.81	.88	.95	1.14	1.26	
11	.120	.45	.51	.57	.63	.70	.78	.87	.94	1.02	1.28	1.40	
10	.134	...	.54	.60	.67	.74	.84	.94	1.02	1.10	1.34	1.47	
$\frac{5}{32}$	.156	...	...	.70	.78	.86	.96	1.04	1.12	1.24	1.40	1.54	
$\frac{1}{16}$	.188	...	...	.74	.86	.98	1.10	1.22	1.34	1.46	1.70	1.86	
$\frac{3}{32}$	.219	...	...	...	.94	1.06	1.20	1.34	1.48	1.62	1.90	2.10	
$\frac{1}{8}$	.250	...	...	...	...	1.14	1.30	1.46	1.62	1.78	2.08	2.32	
$\frac{3}{16}$	.281	...	...	...	...	...	1.38	1.54	1.70	1.88	2.20	2.48	
$\frac{1}{4}$	.313	...	...	...	...	...	...	1.62	1.78	1.98	2.32	2.64	
$\frac{5}{16}$	.344	...	...	...	...	...	...	1.70	1.92	2.14	2.48	2.82	
$\frac{3}{8}$	.375	...	...	...	...	...	...	1.78	2.04	2.28	2.64	3.00	
$\frac{1}{2}$	.438	...	...	...	...	...	...	...	2.20	2.52	2.92	3.32	
$\frac{5}{8}$	.500	...	...	...	...	...	...	...	...	2.68	3.16	3.66	
$\frac{3}{4}$	.563	...	...	...	...	...	...	...	...	...	3.36	3.94	
$\frac{7}{8}$	.625	...	...	...	...	...	...	...	...	...	...	4.26	

Larger sizes also, square and rectangular shapes quoted on application.  
Mill lengths are random, generally 5 feet and over.



COMPARISON STANDARD STEAM, GAS, AND WATER PIPE SIZES  
AND NEAREST SIZES

## SHELBY COLD DRAWN SEAMLESS

Nominal Size Inside Diameter		STANDARD PIPE				EXTRA STRONG PIPE				DOUBLE EXTRA STRONG PIPE			
		Nom- inal Weight per Foot	Thick- ness of Wall	Nearest Fractional size of Seamless		Nom- inal Weight per Foot	Thick- ness of Wall	Nearest Fractional Size of Seamless		Nom- inal Weight per Foot	Thick- ness of Wall	Nearest Fractional Sizes of Seamless	
				O. D.	Thickness			O. D.	Thickness			O. D.	Th'k'ss
1/8	.405	.24	.068	1 3/32	16 Ga.	.29	.100	1 3/32	13Ga.	....	....	....	....
1/4	.540	.42	.088	1 3/16	14 Ga.	.54	.123	1 3/16	11Ga.	....	....	....	....
3/8	.675	.56	.091	1 1/2	13 Ga.	.74	.127	1 1/2	10Ga.	....	....	....	....
1/2	.840	.84	.109	1 5/8	12 Ga.	1.09	.149	1 5/8	9Ga.	1.70	.298	1 3/4	19 5/16
3/4	1.050	1.12	.113	1 3/4	12 Ga.	1.39	.157	1 3/4	8Ga.	2.44	.314	1 1/2	17 1/8
1	1.315	1.67	.134	1 5/8	10 Ga.	2.17	.182	1 5/8	7Ga.	3.65	.364	1 1/4	15 1/4
1 1/4	1.660	2.24	.140	1 5/8	9 Ga.	3.00	.194	1 5/8	5/16	5.20	.388	1 1/8	13 1/4
1 1/2	1.900	2.68	.145	1 7/8	9 Ga.	3.63	.203	1 7/8	6Ga.	6.40	.406	1 1/8	13 1/8
2	2.375	3.61	.154	2 3/8	5/32	5.02	.221	2 3/8	5Ga.	9.02	.442	2 3/8	17 1/8
2 1/2	2.875	5.74	.204	2 7/8	6 Ga.	7.67	.280	2 7/8	3/32	13.68	.560	2 7/8	19 1/4
3	3.500	7.54	.217	3 1/2	4 Ga.	10.25	.304	3 1/2	1/16	18.56	.608	3 1/2	21 1/4
3 1/2	4.000	9.00	.226	4	4 Ga.	12.47	.321	4	1/8	22.75	.642	4	23 1/4
4	4.500	10.67	.237	4 1/2	4 Ga.	14.97	.341	4 1/2	1/4	27.48	.682	4 1/2	25 1/4
4 1/2	5.000	12.49	.246	5	1/4	18.22	.360	5	3/8	32.53	.718	5	27 1/4
5	5.563	14.50	.259	5 5/8	3/32	20.54	.375	5 5/8	3/8	38.12	.750	5 5/8	29 1/4
6	6.625	18.76	.280	6 5/8	3/32	28.58	.437	6 5/8	7/16	53.11	.875	6 5/8	31 1/4
7	7.625	23.27	.301	7 5/8	5/16	37.67	.500	7 5/8	1/2	62.38	.875	7 5/8	33 1/4
8	8.625	28.18	.322	8 5/8	1/2	43.00	.500	8 5/8	1/2	71.62	.875	8 5/8	35 1/4
9	9.625	33.70	.344	9 5/8	1/2	48.25	.500	9 5/8	1/2	....	....	....	....
10	10.750	40.00	.366	10 3/4	3/8	54.25	.500	10 3/4	1/2	....	....	....	....
11	11.750	45.00	.375	11 3/4	3/8	....	....	....	....	....	....	....	....
12	12.750	49.00	.375	12 3/4	3/8	65.00	.500	12 3/4	1/2	....	....	....	....

## COMPARISON OF STANDARD GAUGES IN GENERAL USE

No. of Gauge	THICKNESS IN DECIMALS OF AN INCH						No of Gauge	THICKNESS IN DECIMALS OF AN INCH					
	Birming- ham or Stubb's Iron Wire	Brown & Sharpe	British Imperial or New British	United States	Stubb's Steel Wire	Diameter of Amer. Steel & Wire Co.'s Gauge		Birming- ham or Stubb's Iron Wire	Brown & Sharpe	British Imperial or New British	United States	Stubb's Steel Wire	Diameter of Amer. Steel & Wire Co.'s Gauge
0000	.454	.46000	.400	.40625	....	.3938	12	.109	.08081	.104	.10937	.185	.1055
000	.425	.40964	.372	.37500	....	.3625	13	.095	.07196	.092	.09375	.182	.0915
00	.380	.36480	.348	.34375	....	.3310	14	.083	.06408	.080	.07812	.180	.0800
0	.340	.32486	.324	.31250	....	.3065	15	.072	.05707	.072	.07031	.178	.0720
1	.300	.28930	.300	.28125	.227	.2830	16	.065	.05082	.064	.06250	.175	.0625
2	.284	.25763	.276	.26562	.219	.2625	17	.058	.04526	.056	.05625	.172	.0540
3	.259	.22942	.252	.25000	.212	.2437	18	.049	.04030	.048	.05000	.168	.0475
4	.238	.20431	.232	.23437	.207	.2253	19	.042	.03588	.040	.04375	.164	.0410
5	.220	.18194	.212	.21875	.204	.2070	20	.035	.03196	.036	.03750	.161	.0348
6	.203	.16202	.192	.20312	.201	.1920	21	.032	.0246	.032	.03437	.157	.03175
7	.180	.14428	.176	.18750	.199	.1770	22	.028	.02535	.028	.03125	.155	.0286
8	.165	.12849	.160	.17187	.197	.1620	23	.025	.02257	.024	.02812	.153	.0258
9	.148	.11443	.144	.15625	.194	.1483	24	.022	.02010	.022	.02500	.151	.0230
10	.134	.10189	.128	.14062	.191	.1350	25	.020	.01790	.020	.02187	.148	.0204
11	.120	.09074	.116	.12500	.188	.1205	26	.018	.01594	.018	.01875	.146	.0181

Nominal Inside Diameter Inches	CLASS A GAS NOT TARRED 100 Foot Head. 43 Pounds Pressure.		CLASS B STANDARD. 200 Foot Head. 86 Pounds Pressure.		CLASS C MEDIUM HEAVY. 400 Foot Head. 173 Pounds Pressure.	
	Thick- ness Inches.	Weight Per Foot Pounds.	Thick- ness Inches	Weight Per Foot Pounds	Thick- ness Inches	Weight Per Foot Pounds.
3	.39	14.5	.42	16.2	.45	17.1
4	.42	20.0	.45	21.7	.48	23.3
6	.44	30.8	.48	33.3	.51	35.8
8	.46	42.9	.51	47.5	.56	52.1
10	.50	57.1	.57	63.8	.62	70.8
12	.54	72.5	.62	82.1	.68	91.7
14	.57	89.6	.66	102.5	.74	116.7
16	.60	108.3	.70	125.0	.80	143.8
18	.64	129.2	.75	150.0	.87	175.0
20	.67	150.0	.80	175.0	.92	208.3
24	.76	204.2	.89	233.3	1.04	279.2
30	.88	291.7	1.03	333.3	1.20	400.0
36	.99	391.7	1.15	454.2	1.36	545.8
42	1.10	512.5	1.28	591.7	1.54	716.7
48	1.26	666.7	1.42	750.0	1.71	908.3
54	1.35	800.0	1.55	933.3	1.90	1141.7
60	1.39	916.7	1.67	1104.2	2.00	1341.7
72	1.62	1283.4	1.95	1545.8	2.39	1904.2
84	1.72	1633.4	2.22	2104.2	.....	.....

## HYDROSTATIC PRESSURE TESTS OF CAST-IRON PIPE

Class.....	A	B	C	D
20-inch and larger, per square inch.....pounds	150	200	250	300
18 " " smaller, " " " " " "	300	300	300	300

Pipe..... inches	3	4	6	8	10	12	14	16	18	20
Lead, 2-inches thick, pounds	6	7.5	10.25	13.25	16	19	22	30	33.8	37
Hemp..... "	.18	.21	.31	.44	.53	.61	.81	.94	1	1.25
Pipe..... inches	24	30	36	42	48	54	60	72	84	....
Lead, 2-inches thick, pounds	44	54.25	64.75	75.25	85.5	97.6	108.30	128	147	....
Hemp..... "	1.50	2.06	3	3.62	4.37	6.25	8.25	12.5	15	....

SPECIALS FOR CAST-IRON PIPE

QUARTER BEND



B12

EIGHTH BEND



B13

TEE



B14

CROSS



B15

TABLE OF APPROXIMATE WEIGHTS

Patterns at various mills vary greatly in size, so that it is impossible to show weights that are exact; but in the following list we have tried to show about the maximum weights.

QUARTER BENDS, 90°

Size.... in.	4	6	8	10	12	14	16	18	20	24	30	36
Pounds...	82	130	200	278	366	504	750	888	1,070	1,656	2,836	4,820

EIGHTH BENDS, 45°

Size.... in.	4	6	8	10	12	14	16	18	20	24	30	36
Pounds....	66	105	150	202	265	442	558	663	964	1,515	2,291	4,012

SIXTEENTH BENDS, 22½°

Size .... in.	4	6	8	10	12	14	16	18	20	24	30	36
Pounds....	66	105	150	202	265	382	484	574	858	1,372	2,080	4,012

TEES

Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds
3x3x3	94	8x 8x 4	255	12x12x10	491	16x16x 8	808
4x4x4	128	10x10x10	395	12x12x 8	474	20x20x20	1438
6x6x6	200	10x10x 8	371	12x12x 6	458	24x24x24	2113
6x6x4	183	10x10x 6	352	12x12x 4	445	30x30x30	3660
8x8x8	294	10x10x 4	338	16x16x16	969	36x36x36	5567
8x8x6	270	12x12x12	512	16x16x12	861	48x48x48	.....

CROSSES

Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds
3x3x3x3	125	8x 8x 4x 4	294	12x12x10x10	577	24x24x24x24	2694
4x4x4x4	166	10x10x10x10	493	12x12x 8x 8	545	30x30x30x30	4609
6x6x6x6	257	10x10x 8x 8	443	12x12x 6x 6	512	36x36x36x36	6857
6x6x4x4	*221	10x10x 6x 6	406	12x12x 4x 4	486	48x48x48x48	.....
8x8x8x8	372	10x10x 4x 4	377	16x16x16x16	1259	.....	.....
8x8x6x6	325	12x12x12x12	623	20x20x20x20	1828	.....	.....

## SPECIALS FOR CAST-IRON PIPE

Y BRANCH



B16

REDUCER



B17

INCREASER



B18

OFFSET



B19

## APPROXIMATE WEIGHT

"Y" BRANCHES		REDUCERS				INCREASERS		OFFSETS	
Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds
4 x 4	103	4 x 3	45	12 x 4	179	3 x 4	48	4 x 8	91
6 x 6	181	6 x 4	07	14 x 12	360	4 x 6	104	6 x 14	183
8 x 8	291	6 x 3	60	14 x 10	320	4 x 8	132	8 x 15	280
10 x 10	434	8 x 6	143	14 x 8	288	4 x 10	162	10 x 16	390
12 x 12	632	8 x 4	119	16 x 12	405	6 x 8	150	12 x 17	530
14 x 14	985	10 x 8	198	16 x 10	364	6 x 10	180	14 x 18	695
16 x 16	1413	10 x 6	169	20 x 16	711	6 x 12	218	16 x 19	900
20 x 20	2199	10 x 4	146	20 x 12	576	8 x 10	201	Last	.....
24 x 24	3599	12 x 10	261	24 x 16	838	8 x 12	240	figures	.....
.....	.....	12 x 8	231	30 x 24	2575	10 x 12	267	indicate	.....
.....	.....	12 x 6	202	36 x 30	3684	.....	.....	radius	.....

SLEEVE



B20

PLUG



B21

CAP



B22

## APPROXIMATE WEIGHT

Size.....inches	3	4	6	8	10	12	14	16	18	20	24	30	36	48
Sleeves....pounds	40	47	87	119	176	223	280	443	518	625	821	1,262	1,772	2,770
Plugs....."	10	10	25	33	45	65	85	100	125	150	185	370	470	.....
Caps....."	20	30	40	60	100	120	150	215	225	284	420	450	...	.....

SPLIT TEE



B27

SPLIT SLEEVE



B28

TAPPED PLUG  
For Connection Wrought  
and Cast Iron Pipe

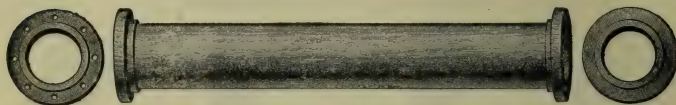
B29

## PRICE EACH

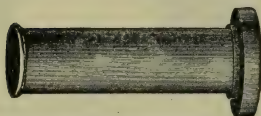
Size.....inches	3	4	6	8	10	12	14	16	18	20
Split Tees.....	5.00	6.25	8.25	10.75	12.50	15.00	18.75	25.00	30.00	35.00
Split Sleeves.....	2.50	2.50	3.75	5.50	7.50	10.00	12.00	16.00	20.00	25.00
Tapped Plugs.....	1.50	1.50	1.75	2.75	3.50	4.00	5.00	6.00	.....	.....



## CAST-IRON PIPE



Flanged B31



Spigot and Flange B32



Hub and Flange B33



B34



B35



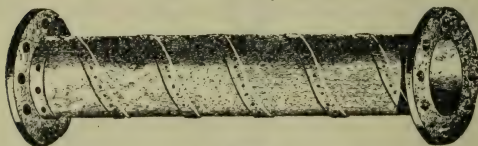
B36

Fittings for Flanged Cast Pipe, also for Spiral Riveted Pipe.  
Prices Quoted on Application.

## SPIRAL RIVETED FLANGE PRESSURE PIPE

Double Galvanized or Asphalted

Tested to 150 Pounds Hydrostatic Pressure



B39

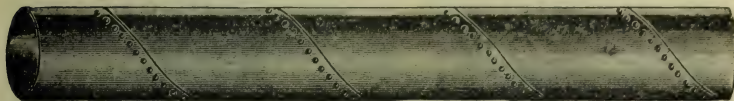
## PRICES INCLUDE FLANGES ATTACHED

List adopted February 15, 1900.

Inside Diameter .....inches	3	4	5	6	7	8	9	10	11
Thickness, B. W. G. number	20	20	20	18	18	18	18	16	16
Double Galvanized..per foot	.50	.70	1.00	1.20	1.40	1.70	2.00	2.60	2.85
Asphalted..... "	.35	.45	.55	.75	.80	.95	1.10	1.45	1.55
Approximate Weight per foot...pounds	2¼	3	4	5	6	7	8	11	12
Inside Diameter.....inches	12	13	14	15	16	18	20	22	24
Thickness, B. W. G. number	16	16	14	14	14	14	14	12	12
Double Galvanized..per foot	3.15	3.60	4.00	4.40	5.00	6.00	7.00	9.00	10.50
Asphalted..... "	1.80	1.95	2.50	2.75	3.05	3.50	3.90	5.55	6.00
Approximate Weight per foot...pounds	14	15	20	22	24	29	34	40	50

Net prices are based on pipe in 20-foot lengths. If shorter are wanted net price must be proportionately higher on account of greater proportion of cost of flanges.

# SPIRAL RIVETED PIPE—PLAIN ENDS



B40

## BLACK OR GALVANIZED, PRICE PER FOOT

Birmingham Wire Gauge and Approximate Weight.

List adopted February 15, 1900.

Size .....in.		3	4	5	6	7	8	9	10	12	14	16
No. 24	Black .....	.20	.25	.30	.33	.37	.42	.48	.54	.68		
	Asphalted ....	.23	.29	.35	.39	.44	.50	.57	.64	.80		
	Galvanized.....	.30	.38	.45	.50	.56	.65	.75	.85	1.05		
	Wt. per 100 ft.	100	130	160	185	210	240	280	300	400		
22	Black .....	.24	.30	.37	.40	.45	.53	.60	.65	.82	1.00	
	Asphalted ....	.27	.34	.42	.46	.52	.61	.69	.75	.94	1.14	
	Galvanized.....	.32	.43	.53	.60	.65	.75	.90	1.00	1.25	1.45	
	Wt. per 100 ft.	130	160	200	230	260	300	340	380	490	575	
20	Black .....	.27	.35	.40	.46	.51	.58	.66	.72	.90	1.10	1.30
	Asphalted ....	.30	.39	.45	.52	.58	.66	.75	.82	1.02	1.24	1.46
	Galvanized.....	.38	.48	.60	.68	.75	.85	.97	1.05	1.35	1.60	1.85
	Wt. per 100 ft.	150	200	250	300	325	360	410	500	600	700	800
18	Black .....	.34	.42	.50	.57	.63	.73	.82	.90	1.15	1.35	1.60
	Asphalted ....	.37	.46	.55	.63	.70	.81	.91	1.00	1.27	1.49	1.76
	Galvanized.....	.46	.58	.70	.85	.90	1.05	1.18	1.30	1.65	1.95	2.25
	Wt. per 100 ft.	185	245	300	360	400	460	525	575	750	900	1,000
Size.....in		6	7	8	9	10	12	14	15	16	18	20
No. 16	Black .....	.70	.80	.93	1.08	1.15	1.45	1.70		2.00	2.20	
	Asphalted ....	.76	.87	1.01	1.17	1.25	1.57	1.84	2.00	2.16	2.38	2.65
	Galvanized.....	1.00	1.10	1.28	1.47	1.55	2.05	2.40	2.60	2.75	3.10	3.40
	Wt. per 100 ft.	500	550	650	750	800	1,025	1,200	1,300	1,375	1,550	1,675
14	Black .....	.89	1.02	1.15	1.32	1.40	1.80	2.10	2.25	2.40	2.75	3.10
	Asphalted ....	.95	1.09	1.23	1.41	1.50	1.92	2.24	2.40	2.56	2.93	3.30
	Galvanized.....	1.15	1.35	1.50	1.70	1.80	2.35	2.70	2.90	3.15	3.60	4.00
	Wt. per 100 ft.	610	700	825	925	1,025	1,325	1,560	1,680	1,790	2,000	2,200
12	Black .....	1.25	1.40	1.55	1.70	1.90	2.50	2.90	3.10	3.25	3.60	4.00
	Asphalted ....	1.31	1.47	1.63	1.79	2.00	2.62	3.04	3.25	3.41	3.77	4.20
	Galvanized.....	1.90	2.10	2.30	2.50	2.75	3.25	3.75	4.00	4.25	4.70	5.25
	Wt. per 100 ft.	800	910	1,040	1,180	1,300	1,700	2,010	2,165	2,310	2,570	2,830

Black and Asphalted furnished in lengths up to 25 ft. Galvanized furnished in lengths up to 20 ft.

Weights given above are for Black only. Galvanized and Asphalted weigh from 10 to 20 per cent heavier.

Spiral Riveted Pipe, with sleeve for slip joint, or Crimped End Pipe, same price as Plain Ends.

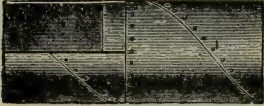
See Couplings next page.

CONNECTIONS FOR SPIRAL RIVETED PIPE

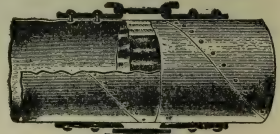
(See preceding page.)

PLAIN SLIP JOINT

CRIMPED END SLIP JOINT  
With Lugs for Wiring



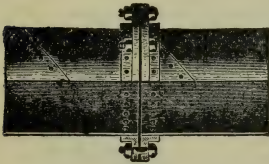
B41



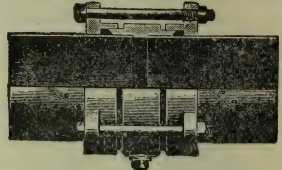
B42

FLANGED JOINT  
For Exhaust Steam, Etc.

BOLTED JOINT — For High  
Pressure Water Mains, Etc.



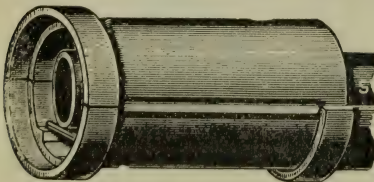
B43



B44

Size Inches	*FLANGES RIVETED TO PIPE		Bolted Joints Complete Black Each	Size Inches	*FLANGES RIVETED TO PIPE		Bolted Joints Complete Black Each
	Black Each	Galvanized Each			Black Each	Galvanized Each	
3	.32	.48	1.15	12	1.72	2.56	6.00
4	.42	.64	1.40	14	2.15	3.20	7.25
5	.54	.80	1.70	15	2.56	3.84	8.00
6	.64	.96	2.10	16	3.64	5.44	8.50
7	.86	1.28	2.50	18	4.16	6.24	10.00
8	.96	1.44	3.25	20	4.60	6.88	11.50
9	1.28	1.92	4.00	22	7.48	11.20	12.50
10	1.50	2.24	4.75	24	8.00	12.00	13.50

\*Price is for one Flange only. Bolts and Gaskets are not included. Lugs for wiring, 15 cents each. No extra charge for slip joints.



B47

BANNON'S LIDDED  
CLAY PIPE CONDUIT

FOR STEAM AND  
WATER PIPE

Each Section 2 feet long

(Discount on this pipe is not governed by price of regular sewer pipe.)

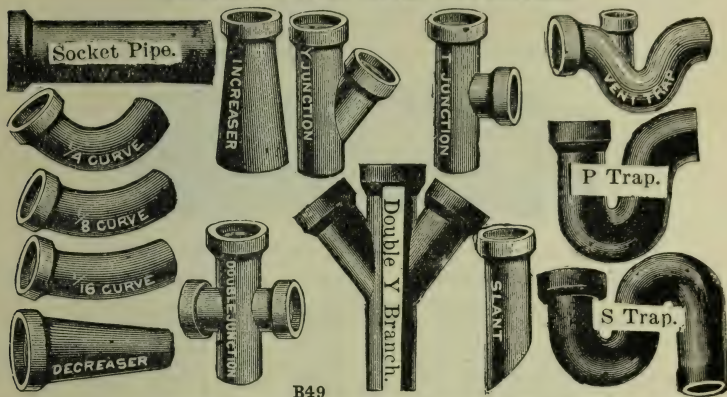
Inside Diameter .....inches	6	8	10	12	15	18	20	24	30
Per foot.....	.25	.35	.55	.70	.90	1.05	1.35	2.00	4.25
Weight per foot.....pounds	18	30	38	50	82	90	105	160	300

Bends same price as a length of pipe.

Is supplied with lugs, as shown in end of cut, every 10 feet, to rest bar on for pipe support.



## SEWER PIPE AND FITTINGS



B49

Size of Pipe Inches	Pipe Price, per Foot	Slants 1 Foot or less, Long Side per Foot	Elbows and Curves, Each	Increasers and Reducers, Each	R. P. S. and Single H. H. Traps, Each	Double H. H. Traps, Each	Stoppers or Plugs, Each	BRANCHES				Weight Pipe per Foot, Pounds
								Y and Tee		Double Y and Tee		
								2 ft. Long	2½ ft. Long	2 ft. Long	2½ ft. Long	
2	.16	....	.50	....	1.50	1.90	.051⅓	.72	....	1.12	....	5
3	.16	.48	.50	.64	1.50	1.90	.051⅓	.72	....	1.12	....	7
4	.20	.60	.65	.80	2.00	2.50	.06⅔	.90	....	1.40	....	10
5	.25	.75	.85	1.00	2.50	3.13	.081⅓	1.13	....	1.76	....	13
6	.30	.90	1.10	1.20	3.50	4.25	.10	1.35	....	2.10	....	16
8	.50	1.50	2.00	2.00	6.60	7.75	.16⅔	2.25	....	3.50	....	23
9	.60	1.80	2.40	2.40	7.50	9.00	.20	2.70	....	4.20	....	28
10	.75	2.25	3.00	3.00	9.00	11.00	.25	3.40	....	5.30	....	35
12	1.00	3.00	4.00	4.00	15.00	16.50	.33⅓	4.50	....	7.00	....	45
15	1.35	4.05	5.40	5.40	....	....	.45	6.10	11.85	9.50	18.30	63
18	1.70	5.10	6.80	6.80	....	....	....	7.65	14.88	11.90	22.96	84
20	2.25	6.75	9.00	9.00	....	....	....	10.13	19.70	15.76	30.40	105
22	2.75	8.25	11.00	11.00	....	....	....	12.38	24.07	19.26	37.14	130
24	3.25	9.75	13.00	13.00	....	....	....	14.63	28.45	22.76	43.90	140
27	4.25	12.75	20.00	17.00	All Branches 27 inches and larger are 30 inches long.			21.25	31.88	31.88	53.14	230
30	5.50	16.50	27.50	22.00				27.50	41.25	41.25	68.75	250
33	6.25	18.75	30.00	25.00				31.25	46.88	46.88	78.14	310
36	7.00	21.00	32.50	28.00				35.00	52.50	52.50	87.50	350

Flat Strainers, Double the price of Stoppers or Plugs.

Increasers shall have sockets on small end. Reducers socket on large end. No slant charged at less than 1 foot. Excess over 1 foot at proportionate rate.

V Branches, special fitting (not illustrated), quoted on application.



WOOD PIPE

Solid and Stave

Can be used for suction or discharge. Solid bored log is recommended for mine use.



B50

Spirally Banded with Galvanized Wire or Hoop, and Coated with Imperishable Asphaltum Cement

Inside Diameter.....inches	2	3	4	5	6	7
Price per ft., tested 160 lbs. or 370 ft. head	.24	.40	.60	.76	.80	.92
" " " 40 " " 92 " "	.22	.36	.56	.72	.76	.88
Weight (Approx.).....per ft.	5	9	12	16	18	20
Thimbles.....each	.12	.20	.26	.32	.40	.46
Reducers and Plugs..... "	.20	.30	.40	.50	.60	.70
Wood Sleeves, Tees, Elbows, Crosses .. "	3.50	4.00	5.00	6.00	7.50	9.00

Inside Diameter.....inches	8	9	10	12	14	16
Price per ft., tested 160 lbs. or 370 ft. head	1.00	1.12	1.24	1.50	2.00	2.90
" " " 40 " " 92 " "	.92	1.08	1.20	1.40	1.80	2.60
Weight (Approx.).....per ft.	22	23	25	30	40	50
Thimbles.....each	.50	.60	.70	.90	1.10	1.30
Reducers and Plugs..... "	.80	.90	1.00	1.20	1.40	1.60
Wood Sleeves, Tees, Elbows, Crosses.. "	11.00	12.50	14.00	18.00	24.00	32.00

Larger sizes quoted on application.  
Wood Tees, Elbows, and Crosses can be used for 80 pounds pressure and less.  
Driving Plugs furnished free with large orders.  
Solid Wood Mine Pipe is most efficient for conveying mine water, brine, acids, and other liquids which would destroy iron pipe.

SQUARE ACID PROOF PIPE

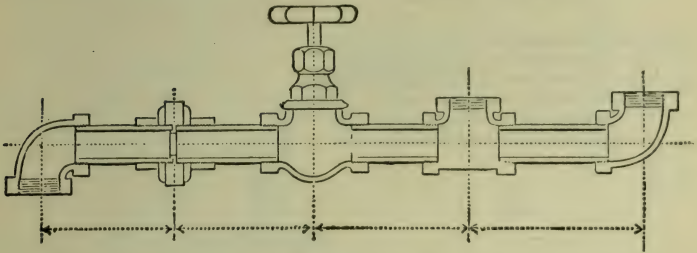
And Tanners' Liquor Logs

Not intended for pressure.  
Fits together with socket ends as illustrated above.  
Manufactured from Selected White Pine Timber.  
When ordering mention bore, also length desired.

Size	Price Lineal Foot	Size	Price Lineal Foot
4 x 4	\$0.13.2	8 x 8	.53.34
5 x 5	.20.84	9 x 9	.67.50
6 x 6	.30	10 x 10	.83.34
7 x 7	.40.84	12 x 12	1.20

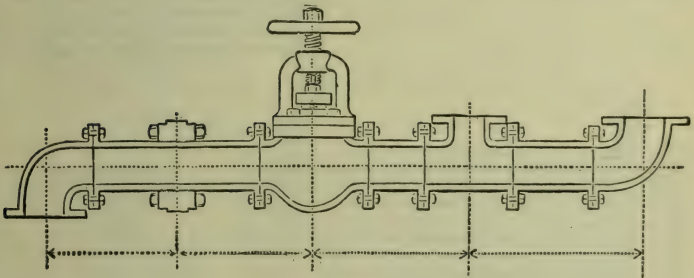
Square Logs are furnished with or without bands in mortice ends.  
For **WOOD PIPE COVERING** see index.

## SPECIAL PIPE CUT TO ORDER



B51

Diagram showing Screwed Valve and Fittings

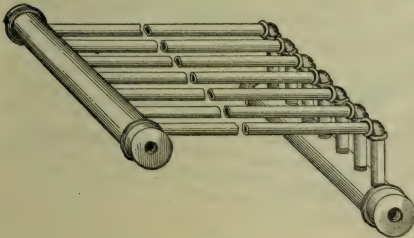


B52

Diagram showing Flanged Valve and Fittings

We are equipped with the most improved facilities for cutting, threading, and fitting all sizes of pipe to sketch.

In laying out work of this kind great care should be taken in making sketches. All measurements should be given center to center, as shown in above diagrams. It is also necessary to know for what purpose the pipe is to be used and pressure required to stand.



B53

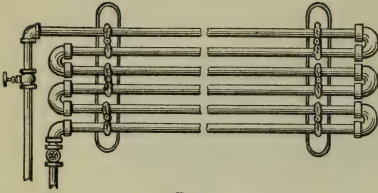
## WROUGHT PIPE HEADER

We usually make these of 4-inch pipe—either Standard or Extra Heavy—the later gives more thread surface and is best for high pressure. The runs are usually of 1-inch standard pipe with right and left ells and nipples. Should not be closer than  $2\frac{1}{2}$  inches center to center. If larger than 1-inch pipe is used for runs, headers should be larger than 4-inch in order to secure thread bearing.

Quoted on application.

## PIPE COILS

For factory heating. Generally made of 1-inch pipe



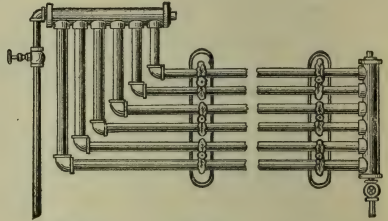
B55

### WALL COIL—B55

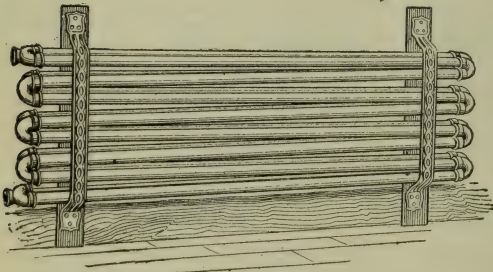
Made with Return Bends, any size to order. Quoted on application. Valves Extra.

### ANGLE WALL COIL—B56

Made with Manifolds, any size to order. Quoted on application. Valves Extra.



B56



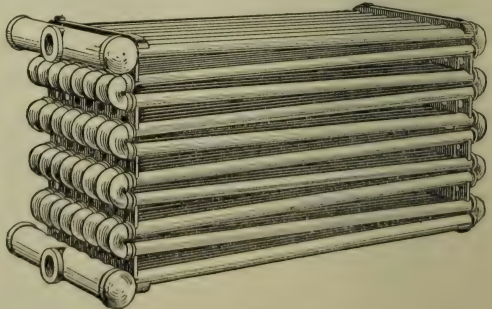
B57

### BRACKET DOUBLE WALL COIL—B57

Made with return Bends, any size to order. Quoted on application.

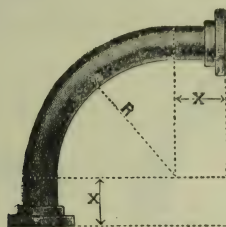
### BOX COIL—B58

Made with Manifold and Return Bends. Any size to order. Quoted on application.



B58

# SQUARE OR 90-DEGREE BENDS OF STEEL PIPE



QUARTER BENDS

B61

(For Standard Radius Bends for taking care of expansion in pipe lines, see note at bottom of page.)

## BENDS OF MINIMUM OR SPECIAL RADIUS

to be used instead of cast-iron fittings

Pipe Size..... inches	2	2½	3	3½	4	4½
Minimum Radius.....	6	7	8	10	12	14
Straight Pipe each end..... inches	3	3½	4	4½	5	5½
Price, Standard Pipe, thr'd'd ends...	2.60	3.60	4.90	6.80	8.30	11.20
Price, Extra Heavy Pipe, thr'd'd ends	3.60	5.30	7.20	9.80	12.40	18.70
Add for two St'd Flanges Ser'd on...	3.40	4.20	5.00	5.60	6.70	8.00
Add for two Ext. Hea. Fl'ges Ser'd on	4.00	5.60	6.30	7.00	8.40	10.00
Pipe Size..... inches	5	6	7	8	10	12
Minimum Radius.....	15	20	24	28	40	50
Straight Pipe each end..... inches	6	6½	7	8	12	14
Price, Standard Pipe, thr'd'd ends...	12.70	18.30	28.70	35.50	76.10	107.00
Price, Extra Heavy Pipe, thr'd'd ends	21.80	33.40	49.50	63.00		
Add for two St'd Flanges Ser'd on...	8.80	10.40	13.50	16.00	23.50	31.00
Add for two Ext. Hea. Fl'ges Ser'd on	10.70	12.50	16.50	19.00	26.50	35.00

Flanges quoted on above are Cast-Iron.

If flanges peened in addition to screwing add 10%.

Forge steel, or special flanges of any kind can be furnished at special price.

Larger bends up to and including 30-inch quoted on application.

**NOTE**—Minimum Radius Bends are not intended for taking care of expansion in pipe lines; for this purpose we furnish what are known as Standard Radius Bends, the radius being much longer. The rule under B63 and B64 should apply.

Prices quoted on specifications.

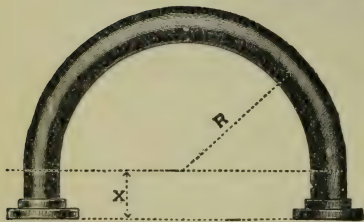


PIPE BENDS

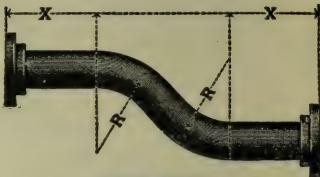
Made From

WROUGHT-IRON OR STEEL PIPE

STANDARD OR EXTRA HEAVY



U BENDS.  
B63



OFFSET BENDS  
B64

The radius of any bend should not be less than 5 diameters of the pipe and a larger radius is much preferable. The length "X" of straight pipe at each end of bend should be not less than as follows:

2½-inch Pipe	X = 4 inches.
3 -inch Pipe	X = 4 inches.
3½-inch Pipe	X = 5 inches.
4 -inch Pipe	X = 5 inches.
4½-inch Pipe	X = 6 inches.
5 -inch Pipe	X = 6 inches.
6 -inch Pipe	X = 7 inches.

7-inch Pipe	X = 8 inches.
8-inch Pipe	X = 9 inches.
10-inch Pipe	X = 12 inches.
12-inch Pipe	X = 14 inches.
14-inch Pipe	X = 16 inches.
15-inch Pipe	X = 16 inches.
16-inch Pipe	X = 18 inches.

These bends can be made of Extra Heavy, full weight, or of Merchant weight Pipe, as ordered.

QUARTER BEND



B65

RETURN BEND



B66

GOOSE NECK



B67

MADE OF EXTRA HEAVY PIPE

Size.....	inches	¾	1	1¼	1½
B65—Quarter Bend. Least radius the pipe can be bent .....	inches	....	2	3	4
Least length center to end quarter bends can be made .....	"	....	5	6	8
B66—Return Bend. Least distance between centers pipe can be bent .....	"	....	4	6	8
Least length center to end return bends can be made. ....	"	....	5	6	8
B67—Goose Neck. Least distance between centers pipe can be made .....	"	....	3½	4	6
Least length center to end goose neck can be made ...	"	....	5	5	6

Dimensions of Wrought Bends vary so that we cannot make a list price. State SIZE, DIMENSIONS, and QUANTITY wanted, when inquiring for price.

# BENT PIPE COILS

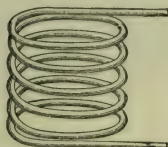
## HEATER COILS



B69



B70



B71

## FRUSTUM COIL



B72

## FLAT COIL



B73

## KETTLE COIL



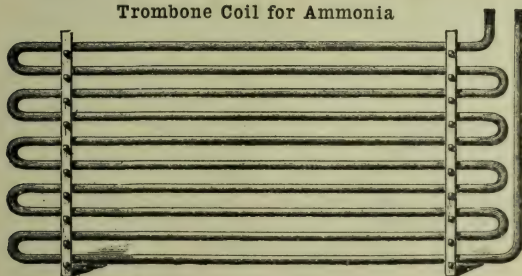
B74

## TANK COIL



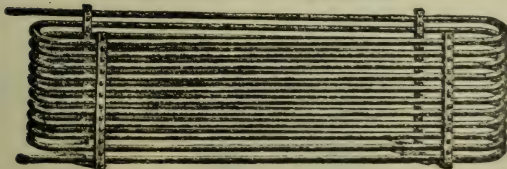
B75

## Trombone Coil for Ammonia



B76

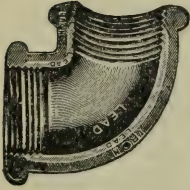
## Rectangular Coil for Ammonia



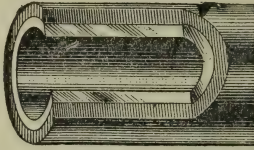
B77

Prices on application. State dimensions.

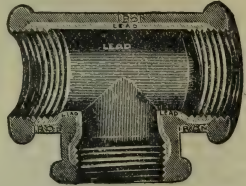
TIN-LINED AND LEAD-LINED  
IRON PIPE AND FITTINGS



B80



B79



B81

Inside diameter, inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5	6
Tin-lined.....per foot	.40	.60	.88	1.10	1.40	2.00	2.70	3.80	.....	.....
Lead-lined.... " "	.26	.40	.52	.64	.88	1.30	1.80	2.20	3.20	4.40

Galvanized Pipe furnished at special prices.

The Tin-lined Pipe is made by pouring melted tin into a wrought-iron pipe. While melted, the tin is inseparably united to the iron and formed into a substantial inner pipe. The Lead-lined pipe is made in the same way. As the substantial lining cannot be separated from the iron, even when bent or coiled, this composite pipe can be used successfully where tin, lead, brass, or iron pipes alone are too expensive or unsatisfactory. The lining of pipe and nipples is beaded on the end, thereby making a continuous lining when connected at every joint. The use of Tin-lined Pipe insures pure water.

For mining, manufacturing, and many other uses requiring a pipe that acids will not destroy, we furnish Lead-lined Pipe at a greatly reduced cost.

TIN-LINED AND LEAD-LINED MALLEABLE IRON FITTINGS

Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
Elbows.....each	.26	.36	.60	.80	1.10	1.40	3.20	4.60
Elbows 45°..... " "	.30	.46	.60	.90	1.20	1.40	3.20	4.60
Tees..... " "	.34	.50	.70	.90	1.20	2.40	3.80	5.00
Tees, reducing..... " "	.44	.64	.90	1.20	1.60	2.40	4.00	5.20
Couplings..... " "	.24	.34	.42	.52	.76	1.10	1.60	2.00

Galvanized Fittings furnished at special prices.

WE ARE ALSO PREPARED TO FURNISH

- LEAD-LINED CAST-IRON SCREWED FITTINGS,
- LEAD-LINED CAST-IRON SCREWED DRAINAGE FITTINGS,
- LEAD-LINED FLANGED PIPE AND FITTINGS,
- LEAD-LINED SOIL PIPE AND FITTINGS,
- LEAD-LINED PUMP COLUMNS,
- LEAD-LINED WROUGHT-IRON NIPPLES, ETC., ETC.
- LEAD-LINED STOP COCKS, GATE VALVES, ETC.

Prices on application.

NOTE.—The Lead lining in all Flanged Pipe and Fittings is turned over on the flanges, forming a gasket, which makes it impossible for the liquid to come in contact with the iron.

ROUGH BRASS FITTINGS

Cast-Iron Pattern, Quoted on Application



B82



B83



B84

# BRASS FITTINGS (IRON PIPE SIZE)

ELBOW



B85

TEE



B86

CROSS



B87

BUSHING



B88

PLUG



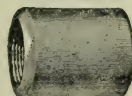
B89

CAP



B90

COUPLING



B91

## PRICE EACH, \*ROUGH BRASS FITTINGS

\*Finished Brass Fittings are Double the List Price of Rough

Size....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
<b>Elbows</b> .....	.12	.17	.21	.28	.35	.50	.85	1.10	1.50	3.50	4.50	7.00	10.00
“ Reducing. ...	.22	.26	.35	.45	.62	1.10	1.40	1.90	4.40	5.65	8.75	12.50	
“ 45° .....	.25	.30	.40	.50	.75	1.25	1.65	2.25	5.25	6.75	.....	.....	
“ Street ....			.35	.55	.75	1.00	1.80	2.50	3.25	.....	.....	.....	
“ Drop Fem ...	.20	.30	.40	.60	.85	1.20	1.90	2.50	.....	.....	.....	.....	
“ Side Outl. ...		.30	.40	.60	.85	1.20	1.60	.....	.....	.....	.....	.....	
<b>Tees</b> .....	.15	.30	.40	.50	.75	1.00	1.30	1.75	4.00	5.50	9.00	13.00	
“ Reducing. ...	.25	.38	.50	.63	.95	1.25	1.65	2.20	5.00	6.90	11.25	16.25	
“ Drop Fem ...		.35	.45	.70	1.05	.....	.....	.....	.....	.....	.....	.....	
“ 4-Way ....			.50	.70	1.00	1.35	1.80	.....	.....	.....	.....	.....	
<b>Crosses</b> .....	.20	.30	.40	.50	.60	.80	1.50	2.00	3.50	5.00	7.00	10.00	14.50
“ Reducing. ...	.38	.50	.65	.75	1.00	1.90	2.50	4.40	6.25	8.75	12.50	18.00	
<b>Bushings</b> ....	.10	.12	.14	.21	.38	.50	.67	1.00	1.50	2.50	.....	.....	
<b>Plugs</b> .....	.09	.10	.12	.15	.20	.28	.40	.50	.90	1.25	2.00	3.00	4.00
<b>Caps</b> .....	.15	.15	.20	.25	.35	.45	.60	.80	1.10	2.00	3.00	.....	
<b>Lock-nuts</b> ....	.10	.10	.12	.15	.20	.30	.45	.70	.95	1.50	2.75	.....	
<b>Reducers</b> .....	.16	.22	.32	.45	.65	.90	1.12	1.85	3.00	4.50	.....	.....	
<b>Couplings</b> ....	.10	.14	.16	.25	.37	.50	.60	.90	1.35	2.40	3.50	7.00	7.00
“ R & L ....	.17	.20	.30	.45	.60	.75	1.12	1.75	.....	.....	.....	.....	
<b>Ret.Bend Close</b> ...			.56	.70	1.00	1.70	2.20	3.00	.....	.....	.....	.....	
“ “ Open			.70	.88	1.25	2.15	2.75	3.75	.....	.....	.....	.....	



## BRASS NIPPLES



Iron Pipe Size

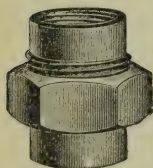


B98

B99

## PRICE EACH

Size Inches	Close		LENGTH, INCHES									
	Length Inches	Price	1½	2	2½	3	3½	4	4½	5	5½	6
⅛	¾	.16	.16	.19	.22	.25	.28	.31	.34	.37	.40	.43
¼	7/8	.20	.20	.24	.28	.32	.36	.40	.44	.48	.52	.56
⅜	1	.23	.23	.28	.33	.38	.43	.48	.53	.58	.63	.68
½	1 1/8	.30	.30	.36	.42	.48	.54	.60	.66	.72	.78	.84
¾	1 3/8	.32	..	.39	.46	.53	.60	.67	.74	.81	.88	.95
1	1 1/2	.40	..	.49	.58	.67	.76	.85	.94	1.03	1.12	1.21
1 ¼	1 5/8	.63	..	..	.75	.87	.99	1.11	1.23	1.35	1.47	1.59
1 ½	1 ¾	.74	..	..	.88	1.02	1.16	1.30	1.44	1.58	1.72	1.86
2	2	1.00	..	..	1.19	1.38	1.57	1.76	1.95	2.14	2.33	2.52
2 ½	2 ½	1.80	..	..	..	2.04	2.32	2.60	2.88	3.16	3.44	3.72
3	2 ½	2.50	..	..	..	2.80	3.20	3.60	4.00	4.40	4.80	5.20
3 ½	2 ¾	4.00	..	..	..	..	..	5.10	5.68	6.26	6.84	7.42
4	3	4.75	..	..	..	..	..	5.86	6.53	7.20	7.87	8.54

STANDARD  
PATTERN

B100

OCTAGON  
PATTERN

B101

## BRASS UNION

Ground Joint

## PRICE EACH

Size.....inch	1/8	1/4	3/8	1/2	3/4	1	1 1/4
*Standard Union.....	.32	.36	.50	.70	.90	1.25	1.70
Octagon " Rough....	.35	.40	.55	.75	1.00	1.40	1.90
" " Finished..	.50	.55	.75	1.00	1.50	2.00	2.50

Size.....inch	1 1/2	2	2 1/2	3	3 1/2	4	
*Standard Union.....	2.50	3.60	6.00	7.75	15.00	22.50	....
Octagon " Rough....	2.75	4.00	6.50	8.50	13.50	18.50	32.00
" " Finished..	3.00	4.50	7.50	10.00	....	....	....

\*Standard Unions are Finished (not necessarily polished).

WILLIAMS' HEAVY UNIONS, brass, ground joint, with ONE LARGE HEX. END or both ends round, take same list price as Standard Brass Unions.

# SEAMLESS BRASS TUBING



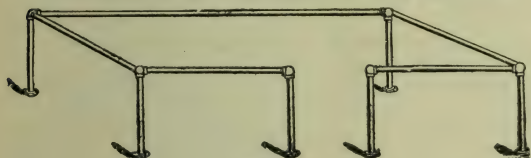
B105

## \*IRON PIPE SIZES—MILL LENGTHS 12 FEET

Extras over Base Prices and Approximate Weight per Foot

Iron Pipe Size...inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2
Add to Base..per pound	.08	.07	.02	.01	BASE PRICE (on application)				
Weight per foot..pounds	.25	.43	.62	.9	1.25	1.7	2.5	3	4
Iron Pipe Size...inches	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	6	7	8
Add to Base..per pound	BASE PRICE		.01	.02	.04	.06	.07	.09	.11
Weight per foot..pounds	5.75	8.3	10.9	12.7	13.9	15.75	18.31	26.28	29.88

\*Other sizes not Iron Pipe Size, quoted on application.

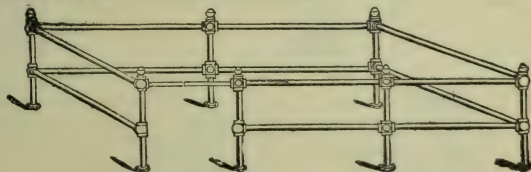


B106

To construct a railing two pipes high, the upper outlet of all fittings used in lower pipes should be tapped with left-hand thread. See Malleable and Brass Railing Fittings next page.

As the fittings are not required to be steam or water tight, a job can be made by

a sufficiently clean thread, to screw up well and make a good running a left-hand tap into any outlet tapped right hand.



B107

## COUNTER BRACKETS



B108

Each  $\frac{3}{4}$  inch..50c; 1 inch..60c.

## BRASS RAILING CAPS



B109

Inches..	$\frac{3}{4}$	1	1 $\frac{1}{4}$
Each...	.40	.50	.70

## RAILING FITTINGS

Threaded Iron Pipe Size

No 1



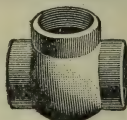
B111

No. 2



B112

No. 3



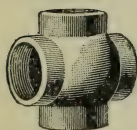
B113

No. 4



B114

No. 5



B115

No. 6



B116

No. 8



B117

No. 11



No. 7



B118

\* WITH RIGHT HAND PIPE THREADS (see note)

Black Malleable Iron

Size.....inches		$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Elbow No. 1.....each		.15	.18	.20	.35	.45	.72
“ “ 2, Side Outlet.....“		.20	.23	.25	.40	.50	.80
Tee “ 3.....“		.20	.23	.25	.40	.50	.75
“ “ 4, Side Outlet.....“		.30	.33	.35	.45	.55	.90
Cross “ 5.....“		.30	.33	.35	.45	.58	1.00
“ “ 6, Side Outlet.....“		.35	.38	.40	.50	.65	1.35
Flange “ 7.....“		.14	.15	.15	.20	.28	.30
Acorn “ 8.....“		.16	.18	.20	.25	.35	.90
Hinge “ 11.....“		.35	.40	.45	.55	.80	1.00

In ordering these Fittings, describe kind wanted by No. and size.

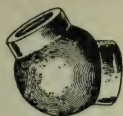
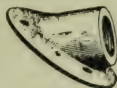
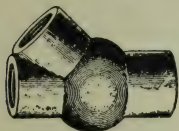
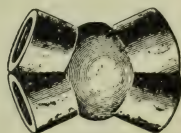
\*Railing Fittings are kept in stock with Right Hand Threads, a Left Hand Thread can be made in any opening by running a left hand tap in. The joint does not need to be air tight, as the fittings are used for railings only. Galvanized Fittings special to order.

Can furnish from factory with certain openings threaded left hand if preferred.

## FINISHED BRASS RAILING FITTINGS

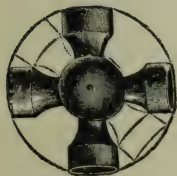
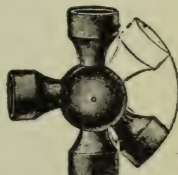
Same Patterns as Illustrated Above

Size.....inches		$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Elbow No. 1.....each		.60	.70	.80	1.20	1.60	2.50
“ “ 2.....“		.80	.90	1.10	1.70	2.00	3.00
Tee “ 3.....“		.80	.90	1.10	1.70	2.00	3.00
“ “ 4.....“		1.20	1.30	1.50	2.00	2.40	3.50
Cross “ 5.....“		1.20	1.30	1.50	2.00	2.40	3.50
“ “ 6.....“		1.40	1.50	1.70	2.25	3.00	4.00
Flange “ 7.....“		.30	.40	.55	.75	1.00	1.30
Acorn “ 8.....“		1.00	1.50	2.00	2.50	3.25	4.50
Hinge “ 11.....“		.90	1.30	1.50	1.90	2.25	3.25

**MALLEABLE 45-DEGREE RAILING FITTINGS****B121-A****B122-B****B123-E****B124-C****B125-D**

Size .....inches	1	1¼	1½	2	2½	3
Price, B121, B122, "A" or "B" ..... each	.40	.70	.90	1.44	2.00	3.00
Same, with Side Outlet..... "	.50	.80	1.00	1.60	2.30	3.40
Price, B124 "C"..... "	.50	.80	1.00	1.60	2.40	3.80
Same, with Side Outlet..... "	.70	.90	1.10	1.80	2.80	4.30
Price, B125 "D"..... "	.70	.90	1.16	2.00	3.00	4.50
Same, with Side Outlet..... "	.80	1.00	1.30	2.70	3.50	5.20
Price, B123 "E"..... "	.30	.40	.56	.60	1.00	1.50

Fittings tapped left hand or right and left, will be charged at special prices.

**ADJUSTABLE RAILING FITTINGS****B131. ELL****B132. TEE****B133. CROSS****B134. STAIR TEE****B135. STAIR CROSS****PLAIN IRON FITTINGS      FINISHED BRASS FITTINGS**

Size .....inches	1	1¼	1½	2	Size .....inches	1	1¼	1½	2
B131.....each	1.10	1.25	1.70	2.25	B131.....each	2.75	3.15	4.25	5.65
B132..... "	1.30	1.50	2.00	2.50	B132..... "	3.25	3.75	5.00	6.25
B133..... "	1.50	1.75	2.35	2.75	B133..... "	3.75	4.40	5.90	6.90
B134..... "	1.30	1.60	3.15	2.50	B134..... "	3.25	4.00	5.40	6.25
B135..... "	1.50	1.85	2.50	2.75	B135..... "	3.75	4.65	6.25	6.90

By means of these Fittings, almost any angle may be obtained in Railings for stairs and other places requiring a deviation from horizontal or perpendicular lines, which would otherwise require special patterns to attain the same results.



## LIST OF SIZES OF MALLEABLE IRON FITTINGS

Known by the manufacturers as stock sizes. All are not kept in stock made up, but can be cast from patterns on hand at the factory.

**Other Sizes** can be furnished at special net prices, depending on quantity ordered.

**We have in our stock**, all the sizes and patterns for which there is sufficient demand to justify us in carrying—and can furnish all the common sizes promptly—other sizes we can ship direct from the factory.

\*Indicates regular **Galvanized Sizes**, others can be furnished if desired.

Beaded Fittings are marked B.

Plain Fittings are marked P.

Some patterns are made both beaded and plain.

ELBOWS		Size		Size		Size	
P.....	1	x	1	*B.....	1 1/4	x	1 1/4
P.....	1 1/4	x	1 1/4	*B.....	1 1/2	x	1 1/2
*B-P.....	1 1/4	x	1 1/4	*B.....	1 3/4	x	1 3/4
P.....	1 1/2	x	1 1/2	*B.....	2	x	2
*B-P.....	1 1/2	x	1 1/2	*B.....	2 1/2	x	2 1/2
*B-P.....	1 1/2	x	1 1/2				
P.....	1 3/4	x	1 3/4				
*B-P.....	1 3/4	x	1 3/4				
*B-P.....	1 3/4	x	1 3/4				
P.....	2	x	2				
*B-P.....	2	x	2				
*B-P.....	2	x	2				
P.....	2 1/2	x	2 1/2				
*B-P.....	2 1/2	x	2 1/2				
*B-P.....	2 1/2	x	2 1/2				
P.....	3	x	3				
*B-P.....	3	x	3				
*B-P.....	3	x	3				
P.....	3 1/2	x	3 1/2				
*B-P.....	3 1/2	x	3 1/2				
*B-P.....	3 1/2	x	3 1/2				
P.....	4	x	4				
*B-P.....	4	x	4				
*B-P.....	4	x	4				
P.....	4 1/2	x	4 1/2				
*B-P.....	4 1/2	x	4 1/2				
*B-P.....	4 1/2	x	4 1/2				
P.....	5	x	5				
*B-P.....	5	x	5				
*B-P.....	5	x	5				
P.....	6	x	6				
*B-P.....	6	x	6				
*B-P.....	6	x	6				

### R. AND L. ELBOWS

Beaded, Black, all sizes, 1/4 to 2 inches, not reducing.

### 3-WAY ELBOWS

Size		Size	
P.....	1	x	1
*P.....	1	x	1
P.....	1 1/4	x	1 1/4
*P.....	1 1/4	x	1 1/4
P.....	1 1/2	x	1 1/2
*P.....	1 1/2	x	1 1/2
P.....	1 3/4	x	1 3/4
*P.....	1 3/4	x	1 3/4
P.....	2	x	2
*P.....	2	x	2
P.....	2 1/2	x	2 1/2
*P.....	2 1/2	x	2 1/2
P.....	3	x	3
*P.....	3	x	3

### DROP ELBOWS

Size Drop		Size Drop	
P.....	1	x	1
*P.....	1	x	1
*P.....	1 1/4	x	1 1/4
*P.....	1 1/2	x	1 1/2
*P.....	1 3/4	x	1 3/4
*P.....	2	x	2

### Short Male and Female.

Size Drop		Size Drop	
*P.....	1	x	1
*P.....	1 1/4	x	1 1/4
*P.....	1 1/2	x	1 1/2
*P.....	1 3/4	x	1 3/4

### With Drop 2 1/2 Inches Long

Size Drop		Size Drop	
*P.....	1	x	1
*P.....	1 1/4	x	1 1/4
*P.....	1 1/2	x	1 1/2
*P.....	1 3/4	x	1 3/4

### 45° ELBOWS.

Size..... Inches, 1/2, 3/4, 1, 1 1/4, 1 1/2, 1 3/4, 2, 2 1/2, 3, 3 1/2, 4, 4 1/2, 5, 6, 1 1/2 inch and 1 3/4 inch and 2 inch can also be furnished Plain, not Beaded.

Such sizes as are marked with a \* can be furnished Galvanized at regular price for Galvanized.

### TEES

In describing Tees the run is first named, then the outlet, thus: 1/2 T 3/4 = 1/2 x 3/4 x 3/4

Size		Size		Size		Size	
P.....	1	x	1	B-P.....	1	x	1
P.....	1 1/4	x	1 1/4	*B-P.....	1	x	1
P.....	1 1/2	x	1 1/2	*B-P.....	1 1/4	x	1 1/4
*B-P.....	1 1/2	x	1 1/2	*B-P.....	1 1/2	x	1 1/2
P.....	1 3/4	x	1 3/4	*B-P.....	1 3/4	x	1 3/4
*B-P.....	1 3/4	x	1 3/4	*B-P.....	2	x	2
P.....	2	x	2	*B-P.....	2 1/2	x	2 1/2
*B-P.....	2	x	2	*B-P.....	3	x	3
*B-P.....	2 1/2	x	2 1/2	*B-P.....	3 1/2	x	3 1/2
P.....	3	x	3	*B-P.....	4	x	4
*B-P.....	3	x	3	*B-P.....	4 1/2	x	4 1/2
*B-P.....	3 1/2	x	3 1/2	*B-P.....	5	x	5
P.....	4	x	4	*B-P.....	6	x	6
*B-P.....	4	x	4				
*B-P.....	4 1/2	x	4 1/2				
P.....	5	x	5				
*B-P.....	5	x	5				
*B-P.....	5 1/2	x	5 1/2				
P.....	6	x	6				
*B-P.....	6	x	6				
*B-P.....	6 1/2	x	6 1/2				

## CROSSES

	Size.
P	x
P	x
P	x
P	x
P-P	x
P	x
P	x
P	x
P	x
P	x
*B-P	x
*B-P	x
*P	x
P	x
B-P	x
*B-P	x
*B-P	x
P	1
P	1
P	1
B-P	1
B-P	1
*B-P	1
*B-P	1
*B-P	1
B	1
B	1
*B-P	1
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*B-P	1
B	2
*B-P	2
*B-P	2
*B-P	2
*B-P	2
B	2
*B	2
B	3
B	3
*B	3
B	3
*B	4
B	4
B	4
B	5

**Y BENDS**

1½ 1¼

1½ 1½



1½

2

1½x1¼

2x1½x1½

Read bottom of run first, then the top, and last the branch.

**Black or Galvanized.**

Size

B.....1	
B-P .. 1¼	
B-P .... 1½	
B-P .... 1½x1¼	
B-P .... 2	
B-P .... 2	x1½x1½
B-P .... 2	x1¼
B-P .... 2	x1½
B-P .... 2½	
B ..... 2½x2	
B ..... 3	
B ..... 3	x2½
B ..... 4	

**CAPS.**

¾-inch and smaller are without Bead

All sizes, ¼-inch to 4-inch.

Also Galvanized, ¼-inch to 1-inch.

**"Y"****BRANCHES.**

All sizes, 1-inch to 4-inch.

Straight, not reducing, black and Galvanized.

**COUPLINGS**

**Right and Left**

Sizes, ¼-inch to 2-inch.

Black and Galvanized.

**Right Hand**

Sizes, ¼-inch to 2-inch.

Black and Galvanized.

**LOCK NUTS**

Sizes, ¼-inch to 2-inch.

Black and Galvanized.

**WASTE NUTS**

Sizes, ¼-inch to 1½-inch.

Black and Galvanized.

**CHANDE LIER HOOKS**

**Male or Female**

Black, ¾-inch and 1-inch.

**Right Hand.**

**WALL PLATES**

¾ and ½ Inch

**EXTENSION PIECES**

**Male and Female**

\*¾-inch, \*½-inch and \*¼-inch.

**RETURN BENDS**

**Close Pattern**

Dist. between

Size Centers

* ¼	1
* ¾	1¼
* 1	1½
* 1¼	1¾
* 1½	2¾
* 2	2¾

**Medium Pattern**

Dist. between

Size Centers

* ¼	1½
* ¾	1¾
* 1	1½
* 1¼	2¼
* 1½	2½
* 2	3

**Open Pattern.**

Dist. between

Size Centers

* ¼	1½
* ¾	2
* 1	2½
* 1¼	3
* 1½	3½
* 2	4
* 2½	4½
* 3	5

**Galvanized Malleable Iron Unions, ¼-inch to 4-inches.**

Such sizes as are marked with a \* can be furnished Galvanized at regular price for Galvanized.

**New Patterns and Sizes** are being added constantly at the factory, and we can generally furnish any size desired on special order, although the size may not be listed on the preceding pages.

**APPROXIMATE WEIGHTS  
OF 10 MALLEABLE IRON FITTINGS**

In Pounds and Decimal Fractions

Size .....Inch	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Ells .....	.6	1	1.8	2.6	5	7.7	11	13	22
Street Ells.....	...	1.5	1.8	2.8	5	8	11	16	26
45° Ells .....	...	...	...	2.5	4	5.5	9	12	18
3-Way Ells .....	...	...	1.7	3	3.5	6	12	16	...
Tees.....	1	1.3	2	3	6.5	8.5	14	17	27
Tees, 4-Way .....	...	...	...	3	4	10	13	16	...
Crosses.....	...	1.6	2.5	3.2	7	10	16	20	29
Drop Ells, Female .....	...	1.6	1.8	2.7	4	5.5	...	...	...
Drop Ells, Short Shank	1.7	1.6	2	3.5	...	...	...	...	...
Drop Ells, Long Shank	...	2.5	2.8	...	...	...	...	...	...
Drop Tees, Female .....	...	2	2	2.8	6	...	...	...	...
Drop Tees, Short Shank	...	2	2	2.8	3.2	6	...	...	...
Reducing Couplings...	...	.6	1.2	1.5	2.4	3.5	6.5	8.5	14
Right & Left Couplings	...	.8	1.3	2.1	3	5.5	8	12	17
Lock Nuts .....	...	.4	.6	.8	1.3	1.8	3	3.5	5
Waste .....	...	.5	.7	1	1.3	1.5	...	...	...
Wall Plates.....	...	...	1.5	...	...	...	...	...	...
Chand. Hooks.....	...	...	2	2.8	...	...	...	...	...
Return Bends, Open...	...	...	2.2	4.2	8.2	14	20	32	56
Return Bends, Close...	...	...	2	3.5	7	10	17	25	40
Y Bends .....	...	...	...	...	...	12	19	28	44

Size .....Inch	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6		
Ells .....	39	60	75	125	175	250	365	...	...
Street Ells .....	45	...	...	...	...	...	...	...	...
45° Ells .....	31	60	75	90	...	180	240	...	...
Tees.....	47	75	100	150	185	280	400	...	...
Crosses.....	60	89	105	150	...	...	...	...	...
Reducer .....	22	40	60	62	...	...	...	...	...
Lock Nuts.....	19	20	27	50	...	...	...	...	...
Return Bends, Open...	75	110	...	...	...	...	...	...	...
Return Bends, Close...	63	85	...	...	...	...	...	...	...
Y Bends.....	..	100	...	...	...	...	...	...	...



# **MALLEABLE IRON FITTINGS** **CLASSIFICATION AND LIST**

Adopted June 5, 1907

Price List of Stock Sizes. Other Sizes at Special Prices

Class.....	A	B	*C
Black..... per pound	40	20	12
Galvanized... "	50	28	19
<b>Elbows.....</b>	$\left\{ \begin{array}{l} \frac{1}{8} \times \frac{1}{8} \\ \frac{1}{4} \times \frac{1}{8} \\ \frac{3}{8} \times \frac{1}{8} \end{array} \right\}$	$\left\{ \begin{array}{l} \frac{3}{8} \times \frac{1}{4} \\ \frac{1}{2} \times \frac{1}{4} \\ \frac{1}{4}, \frac{3}{8}, \frac{1}{2} \\ \frac{1}{2} \times \frac{3}{8} \\ \frac{1}{2}, \frac{3}{4}, 1 \end{array} \right\}$	$\frac{3}{4}$ and larger
" R. & L.....	$\frac{1}{4}, \frac{3}{8}$	2 and smaller	$1\frac{1}{4}$ and larger
" 45° .....		$\frac{1}{4}$ to $1\frac{3}{4}$ inclusive	$2\frac{1}{2}$ and larger
" Street .....		all sizes	1 and larger
" Side Outlet.....		all sizes	
" Drop.....		$\left\{ \begin{array}{l} \frac{1}{4}, \frac{3}{8}, \frac{1}{2} \\ \frac{1}{4} \times \frac{3}{8} \\ \frac{3}{8} \times \frac{1}{4} \times \frac{1}{4} \\ \frac{3}{8} \times \frac{3}{8} \times \frac{1}{4} \\ \frac{3}{8} \times \frac{1}{4} \times \frac{3}{8} \\ \frac{1}{2} \text{ reducing} \end{array} \right\}$	
<b>Tees.....</b>	$\left\{ \begin{array}{l} \frac{1}{8} \times \frac{1}{8} \\ \frac{1}{8} \times \frac{1}{4} \\ \frac{1}{4} \times \frac{1}{8} \\ \frac{3}{8} \times \frac{1}{8} \end{array} \right\}$		$\frac{3}{4}$ and larger
" Four Way .....		all sizes	
" Drop .....		all sizes	
" Service .....		$\left\{ \begin{array}{l} \frac{1}{2}, \frac{3}{4} \\ 1 \times \frac{3}{4} \times 1 \end{array} \right\}$	1 and larger
<b>Crosses .....</b>		$\frac{1}{4}$ to 1 inclusive	$1\frac{1}{4}$ and larger
" Reducing .....		1 and smaller	$1\frac{1}{4}$ and larger
<b>Return Bends.....</b>		$\frac{3}{8}$ to 1 inclusive	$1\frac{1}{4}$ and larger
" " R. & L....	$\frac{3}{8}, \frac{1}{2}$	$\frac{3}{4}$ and larger	
<b>Couplings, R. H.....</b>		$\frac{3}{8}$ to $\frac{3}{4}$ inclusive	1 and larger
" R. & L.....		$\frac{3}{8}$ to $\frac{3}{4}$ inclusive	1 and larger
" Reducing...	$\left\{ \begin{array}{l} \frac{1}{4} \times \frac{1}{8} \\ \frac{3}{8} \times \frac{1}{8} \end{array} \right\}$	$\left\{ \begin{array}{l} \frac{3}{8} \times \frac{1}{4} \text{ to} \\ 1 \times \frac{3}{4} \text{ inclusive} \end{array} \right\}$	$1\frac{1}{4}$ and larger
<b>Caps .....</b>		$\frac{1}{4}$ to 1 inclusive	$1\frac{1}{4}$ and larger
<b>Locknuts.....</b>		$\frac{1}{4}$ to $1\frac{1}{4}$ inclusive	$1\frac{1}{2}$ and larger
<b>Extension Pieces .....</b>		all sizes	
<b>Waste Nuts.....</b>		all sizes	
<b>Chandelier Hooks .....</b>		all sizes	
" Loops .....		all sizes	
<b>Wall Plates.....</b>		all sizes	
<b>Y Bends, 45° .....</b>		all sizes	
<b>Pump Rod Sockets.....</b>	$\frac{3}{8}, \frac{3}{8} \times \frac{7}{16}, \frac{7}{16}$	$\frac{1}{2}$	

\*Such fittings in Class C as have one or more openings smaller than  $\frac{3}{4}$  to be Class B.

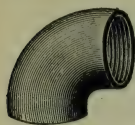
The run of tees gives the sizes for the purpose of classification; the outlet being larger does not change it.

In ordering be particular to state whether beaded or plain.

An extra charge will be made for fittings not enumerated in standard list.

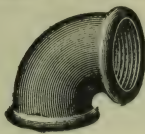
MALLEABLE IRON FITTINGS

ELBOW, PLAIN



B141

ELBOW, BEADED



B142

45° ELBOW, BEADED



B143

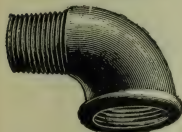
ELBOWS. PRICE EACH

Size .....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Black Right H....	.04	.04	.06	.10	.15	.22	.25	.35	.50	.80	1.50	2.25	3.00	4.00	5.00
“ R. and L.....	.05	.07	.12	.17	.25	.30	.40	.65	.....	.....	.....	.....	.....	.....	.....
Galv. Right H....	.05	.08	.14	.20	.32	.40	.60	.90	1.35	2.60	3.75	5.00	.....	.....	.....

45° ELBOWS. PRICE EACH

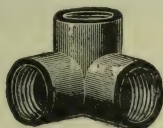
Size ....in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Black .....	.08	.10	.12	.18	.26	.36	.54	.82	1.25	2.50	3.25	4.50	6.00	7.50
Galv.....	.12	.15	.20	.25	.40	.50	.85	1.35	1.90	3.75	.....	6.75	.....	.....

STREET ELBOW



B144

SIDE-OUTLET ELBOW



B145

DROP ELBOW, FEMALE



B146

ELBOWS. PRICE EACH

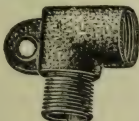
Size .....	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Street Elbows, Black.....		.10	.10	.12	.20	.25	.40	.55	.90	1.50
“ “ Galvanized .....		.12	.12	.15	.28	.35	.55	.80	1.30	.....
Side-Outlet Elbows, Black .....		.....	.08	.10	.18	.30	.45	.60	1.00	.....
Drop Elbows, Black .....		.....	.06	.08	.12	.20	.....	.....	.....	.....
“ “ Galvanized .....		.....	.....	.12	.20	.35	.....	.....	.....	.....

DROP ELBOW  
Flange Right Side



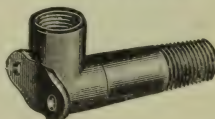
B147

DROP ELBOW  
Flange Left Side



B148

LONG DROP ELBOW  
Male and Female

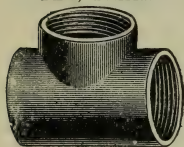


B149

Sizes, 3/8 x 3/8 or 1/2 x 3/8. B147 and 148: Black, 8c. each. B149: Black, 10c., Galvanized, 18c. each.

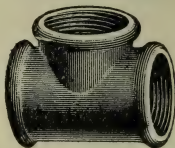
## MALLEABLE IRON FITTINGS

TEE, PLAIN



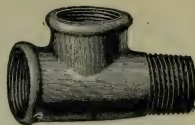
B151

TEE, BEADED



B152

SERVICE TEE



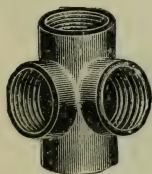
B153

### TEES, PRICE EACH

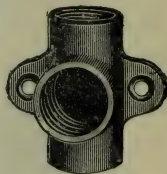
Size, in.	$\frac{1}{8}$ - $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Black...	.07	.08	.11	.15	.25	.30	.45	.60	1.05	1.70	2.50	3.40	4.25	5.00	7.00
Galv...	.09	.10	.16	.20	.38	.50	.70	1.00	1.90	3.00	4.25	5.75	....	....	....

### SERVICE TEES

Size .....	inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Price, Black .....	each	.15	.25	.35	.50	.75	1.15	2.00
Price, Galvanized .....	"	.20	.35	.50	.70	1.10	1.65	....

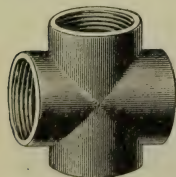
FOUR-WAY  
TEE

B154

DROP TEE,  
FEMALE

B155

Size .....	inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Four-Way Tees, Black... each	....	.12	.14	.20	.35	.50	.80	1.25	
Drop Tees..... "	.08	.10	.14	.22	.30	....	....	....	
Drop Tees, Galvanized.. "	....	.15	.25	.40	.55	....	....	....	
Drop Tees, Long, Black.. "	....	.12	....	....	....	....	....	....	

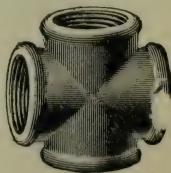


PLAIN

B156

### CROSSES

BEADED



B157

Size . inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Black . each	.08	.10	.12	.20	.30	.40	.60	1.00	1.75	3.00	3.25	5.25
Calv. . "	...	.15	.17	.25	.45	.60	.90	1.50	2.75	4.50	5.00	8.00

# MALLEABLE IRON FITTINGS

Y-BRANCH



B160

REDUCING COUPLING



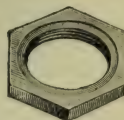
B161

CAP



B162

LOCKNUT



B163

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Y-Branch, Black, ea.	....	....	.25	.40	.60	.80	1.00	1.70	2.00	4.00	.....	.....
Y-Branch, Galv. "	....	....	.38	.60	.90	1.25	1.50	2.50	3.00	6.00	.....	.....
Red'g Couplings, Blk. "	.03	.03	.05	.10	.16	.20	.28	.45	.70	1.00	1.50	1.85
Red'g Couplings, Galv. "	....	.05	.08	.15	.25	.35	.45	.75	1.05	1.65	2.40	3.05
Caps, Black..... "	.03	.04	.05	.08	.12	.16	.24	.32	.45	.85	1.00	1.20
Caps, Galv..... "	.04	.05	.08	.12	.17	.24	.38	.52	.76	1.30	1.60	2.00
Locknut, Black, "	.02	.03	.04	.05	.07	.09	.11	.18	.40	.50	.....	.....
Locknut, Galv... "	.03	.04	.05	.07	.10	.14	.20	.30	.55	.70	.....	.....

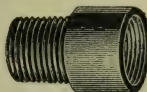
R. H. COUPLING R. and L. COUPLING EXTENSION PIECE WASTE NUT



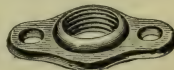
B164



B165



B166



B167

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
R. H. Coupling, Black.....each	.03	.04	.07	.10	.14	.20	.25	.35
R. H. Coupling, Galvanized..... "	.05	.07	.10	.17	.23	.30	.40	.55
R. and L. Coupling, Black..... "	.04	.05	.08	.12	.16	.25	.36	.52
R. and L. Coupling, Galvanized..... "	.06	.08	.10	.17	.25	.35	.55	.75
Extension Piece, Black..... "	....	.06	.09	.12	....	....	....	....
Extension Piece, Galvanized..... "	....	.09	.13	.18	....	....	....	....
Waste Nut, Black..... "	.04	.05	.06	.08	.10	....	....	....
Waste Nut, Galvanized..... "	.08	.10	.12	.16	.20	....	....	....

WALL PLATE



B168

CHANDELIER  
HOOK, FEMALE


B169

CHANDELIER LOOP



B170

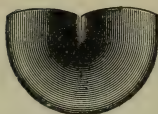
HEXAGON  
NIPPLE


B171

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Waste Nut, Black.....each	.04	.05	.06	.08	.10	....	....	....
Waste Nut, Galvanized..... "	.08	.10	.12	.16	.20	....	....	....
Wall Plate, Black..... "	....	.12	....	....	....	....	....	....
Hooks and Loops, Black..... "	....	.10	.12	....	....	....	....	....
Hexagon, Right and Left Nipple, Black..... "	....	....	....	.25	.30	.40	.50	.70

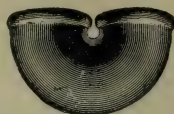


## MALLEABLE IRON FITTINGS



B172 Closed

### RETURN BENDS



B173 Open

### CLOSE PATTERN

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
R. H., Black.....each	.13	.25	.35	.50	.75	1.00
R. H., Galvanized....."	.25	.35	.55	.75	1.15	1.65
R. and L., Black....."	.15	.30	.45	.60	.90	1.25
L. H., Black....."	.15	.30	.45	.60	.90	1.25
Center to Center.....inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{3}{16}$	$2\frac{5}{8}$

### OPEN PATTERN

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
R. H., Black.....each	.15	.30	.50	.65	.85	1.25	2.00	3.00
R. H., Galvanized....."	.25	.45	.70	.90	1.25	2.00	3.50	5.00
R. and L., Black....."	.20	.38	.60	.80	1.05	1.55	2.50	3.75
L. H., Black....."	.20	.38	.60	.80	1.05	1.55	2.50	3.75
Center to Center.....inches	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5

### MEDIUM PATTERN—NOT ILLUSTRATED

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
R. H., Black.....each	.13	.25	.35	.50	.75	1.00	1.65	2.50
R. H., Galvanized....."	.25	.35	.55	.75	1.15	1.65	2.50	3.75
R. and L., Black....."	.15	.30	.45	.60	.90	1.25	2.00	3.00
L. H., Black....."	.15	.30	.45	.60	.90	1.25	2.00	3.00
Center to Center.....inches	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3

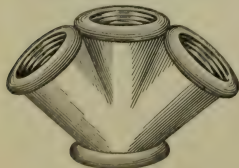
### SPECIAL WIDE PATTERN—RIGHT HAND NOT ILLUSTRATED

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	3	4	6
Black.....each	.25	1.00	1.25	1.25	1.25	2.00	3.00	5.00	8.00	16.00
Galvanized....."	.30	1.35	1.65	1.70	1.70	2.75	4.00	6.50	10.00	20.00
Center to Center.....in.	$1\frac{1}{2}$	4	6	6	6	6	5	$7\frac{1}{2}$	8	12

### EXTRA HEAVY—NOT ILLUSTRATED

Size.....inches	1	$1\frac{1}{2}$	2	3	4	6
Center to Center.....inches	$1\frac{3}{4}$	$2\frac{1}{4}$	5	3	$3\frac{1}{4}$	$3\frac{3}{4}$

Prices on application.



B174

### DOUBLE Y BRANCH

Size 1 to 3-inch.  
Black and Galvanized.  
For factory shipment.  
Prices quoted on application.  
State quantity wanted.

# MALLEABLE IRON FITTINGS

## BUSHING



B175

Bushings 2-inch and smaller reducing one size only are Malleable Iron

For other sizes see Cast-Iron Fittings, B198.

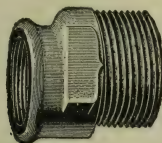
## FACED BUSHING



B176

Size..... inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Bushings, Plain....each	.04	.04	.04	.05	.06	.07	.09	.14	.21
Bushings Galvanized..... "	.08	.08	.08	.10	.12	.14	.18	.28	.42
Faced Bushings, Plain.... "	.....	.08	.09	.11	.13	.17	.22	.32	.48

# MALLEABLE OFFSET REDUCER



B177

Size inches	$1 \times \frac{3}{4}$	$1\frac{1}{4} \times 1$	$1\frac{1}{2} \times 1\frac{1}{4}$	$2 \times 1\frac{1}{2}$	$2\frac{1}{2} \times 2$	$3 \times 2\frac{1}{2}$	$3\frac{1}{2} \times 3$	4x3	5x4
Price each	.60	.70	.90	1.10	1.80	2.50	3.00	4.00	6.00



B178

## CROSS OVER

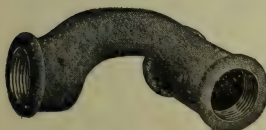
Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1
Black.....each	.20	.30	.45
Galvanized..... "	.25	.40	.60



B179

## CROSS OVER — With Back Outlet

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1
Black.....each	.30	.35	.65
Galvanized..... "	.40	.55	.95

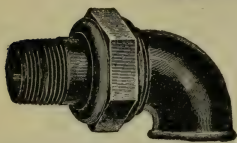


B180

## CROSS OVER TEE

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1
Black.....each	.35	.45	.75
Galvanized..... "	.55	.70	1.15

## MALLEABLE IRON FITTINGS

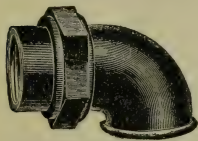


### UNION ELLS

Male and Female

B185

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Black.....each	.48	.62	.72	1.05	1.20	1.80	3.30
Galvanized....."	.72	.93	1.08	1.60	1.80	2.70	4.95

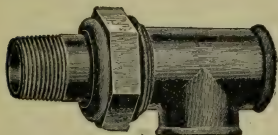


### UNION ELLS

Female

B186

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Black.....each	.42	.54	.63	.90	1.05	1.55	2.85
Galvanized....."	.63	.81	.95	1.35	1.58	2.35	4.30

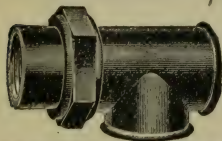


### UNION TEES

Male and Female

B187

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Black.....each	.52	.65	.80	1.10	1.30	1.95	3.70
Galvanized....."	.78	1.00	1.20	1.65	1.95	2.95	5.55



### UNION TEES

Female

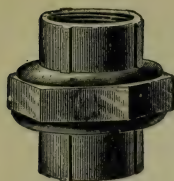
B188

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Black.....each	.45	.57	.70	.95	1.15	1.70	3.20
Galvanized....."	.68	.86	1.05	1.45	1.75	2.55	4.80

## KEWANEE UNION ELLS AND TEES

Similar to above, except body is of brass, with ground joint union.

Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Ell, Male and Fem.	Black..ea.	.30	.50	.75	.95	1.10	1.60	1.80	2.70
	Galv. ..	.40	.65	1.10	1.40	1.65	2.40	2.70	4.00
Ell, Female.....	Black.."	.25	.45	.65	.85	1.00	1.35	1.60	2.35
	Galv. ..	.35	.50	1.00	1.25	1.50	2.00	2.40	3.50
Tee, Male and Fem.	Black.."	.35	.55	.80	1.00	1.20	1.65	1.95	2.95
	Galv. ..	.45	.75	1.20	1.50	1.80	2.50	3.00	4.45
Tee, Female.. ..	Black.."	.30	.50	.70	.90	1.05	1.45	1.75	2.55
	Galv. ..	.40	.65	1.05	1.30	1.60	2.20	2.65	3.90



B189

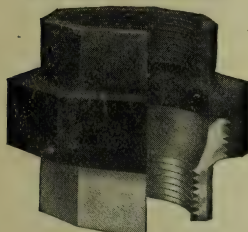
**UNIONS**  
**STANDARD**  
**MALLEABLE LIPPED UNION**

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Black....each	.18	.18	.20	.22	.27	.33	.46	.58	.75	1.55	2.10	3.65	4.35
Galvan... "	.27	.27	.30	.33	.40	.50	.70	.90	1.15	2.35	3.15	5.50	6.50

**KEWANEE UNIONS**

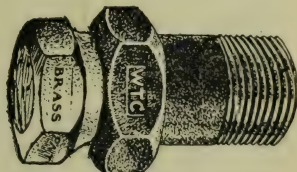
Brass and Iron Ground Ball Joint

**KEWANEE OCTAGON**



B190

**HEX. AND MALE**  
**Special Pattern**



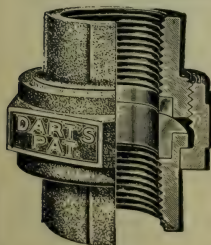
B191

Suitable for  
High  
Pressure.

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Black.....each	.18	.19	.22	.27	.40	.48	.66	.80	1.14	2.10	2.65
Galvanized..... "	.22	.23	.26	.34	.49	.60	.82	1.10	1.40	2.75	3.50

B190 can be furnished from factory, with **Round Ends** instead of octagon.

B191 can be furnished from factory, short pattern with **Female Threads**.



B192

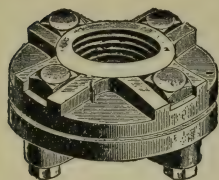
**DART UNIONS**

Bronze Seats, Ball Bearings, Ground Joints

Suitable for High Pressure Steam.

Size.inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Black.each	.30	.30	.40	.50	.60	.80	1.20	1.60	2.00	3.20	4.80	7.20	10.80
Galvan. "	.45	.45	.60	.75	.90	1.20	1.80	2.40	3.00	4.80	6.20	10.80	16.20





B195

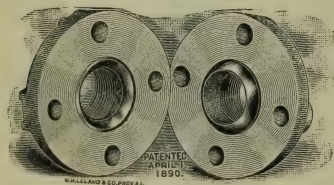
## STANDARD CAST-IRON FLANGE UNIONS

(Galvanized Unions Double Black List.)

(14 in., 15 in., and 16 in. UNION SPECIAL)

Inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Each.....	.40	.46	.52	.64	.78	1.00	1.25	1.50	1.80
Inches.....	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Each.....	2.10	2.70	3.15	3.95	5.50	7.00	10.00	11.50	16.00

Generally the different sizes of flange unions have following number of bolts:  $\frac{1}{2}$  to 1-inch, three bolts;  $1\frac{1}{4}$ -inch to  $3\frac{1}{2}$ -inch, four bolts; 4-inch to 5-inch, five bolts; 6-inch, six bolts; 7-inch and 8-inch, seven bolts; 9-inch, eight bolts; 10-inch, ten bolts; 12 inch, twelve bolts—however, different manufacturers vary, use different number of bolts, and vary somewhat from above figures.

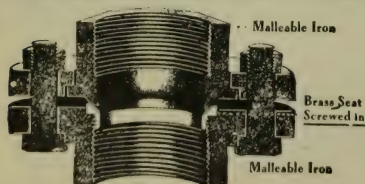


B196

## DART PATENT FLANGE UNIONS BRONZE SEATS, BALL BEAR- INGS, GROUND JOINTS

Suitable for High Pressure Steam. If with Malleable Iron Flanges, add 10 per cent. If galvanized, add 35 per cent.

Size ..... inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Each.....	.55	.60	.80	1.20	1.60	2.00	3.20	4.80	6.00
Size ..... inches	4	$4\frac{1}{2}$	5	6	7	8	9	10	....
Each.....	7.50	8.75	10.00	12.50	....	18.00	....	28.80	...

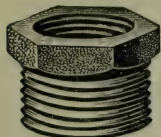


B197

## KEWANEE FLANGE UNIONS

Malleable Iron with Ground Joint, Brass Seat. Suitable for High Pressure Steam.

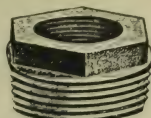
Size ..... inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Black.....each	.80	1.20	1.60	2.00	3.20	4.80	6.00	7.50
Galvanized.....	1.20	1.80	2.40	3.00	4.80	7.20	9.00	11.25
Size ..... inches	$4\frac{1}{2}$	5	6	7	8	9	10	....
Black.....each	8.75	10.00	12.50	15.00	18.00	21.60	28.80	....
Galvanized.....	13.00	15.00	18.75	22.50	27.00	32.40	43.20	...



**B198**

## CAST-IRON BUSHINGS

For 2 inch and smaller Bushing  
reducing one size only, see Malleable  
Bushings, B175.



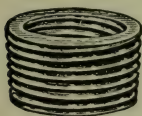
**\*B199**

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Each.....	.04	.05	.06	.07	.09	.14	.21	.30	.40
Size.....inches	4	$4\frac{1}{2}$	5	6	7	8	9	10	....
Each.....	.50	.75	.93	1.25	1.87	2.75	3.25	5.00	....

For list of sizes see B240 $\frac{1}{2}$ .

\*B199 is a pattern that can be furnished only in some sizes, and where the bushing reduces two or more sizes.

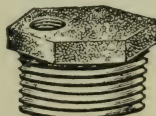
### FACED



**B200**

For smaller sizes see Malleables.  
Faced Bushings are ordinarily made  
reducing one size only.

### ECCENTRIC



**B201**

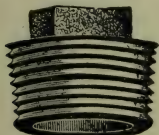
Made to order.  
Factory shipments only.  
Prices on application.

## SPECIAL BUSHINGS

### FACED BUSHINGS

Size.....inches	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Faced.....each	.48	.70	1.20	1.50	2.10	2.60	3.75

### REGULAR



**B202**

## CAST-IRON PLUGS

### COUNTERSUNK



**B203**

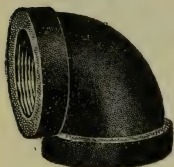
Size.....inches	$\frac{1}{8}$ - $\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Plug.....each	.02	.03	.04	.05	.07	.10	.18	.25	.38
Countersunk....."	.04	.06	.08	.09	.11	.15	...	...	...
Solid....."	.04	.06	.08	.09	.11	.15	.27	.38	.57
Size.....inches	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Plug.....each	.42	.65	.88	1.20	1.85	2.75	3.25	3.75	5.00
Solid....."	...	1.00	1.35	1.80	2.80	4.15	5.00	5.75	7.50
	.63	...	...	...	...	...	...	...	...

Left-hand plugs same list as countersunk plugs.

Galvanized Cast-Iron Fittings, double the list of black.

## STANDARD CAST-IRON FITTINGS

ELBOW



B205

## ELBOWS

For list of sizes, see B238.

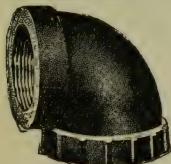
Pitched Ells are either straight or reducing, at same price.

REDUCING ELBOW



B206

Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Ell.....each	.05	.05	.06	.08	.10 $\frac{1}{2}$	.16	.20
Ell, Reducing....."	....	.06	.07	.09	.12	.18	.23
Ell, Pitched....."	....	....	....	.10	.13	.20	.25
Size.....inches	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
Ell.....each	.28	.50	.75	1.05	1.20	1.75	2.00
Ell, Reducing....."	.32	.60	.85	1.20	1.40	2.00	2.30
Ell, Pitched....."	.35	.65	1.00	1.30	1.50	....	....
Size.....inches	6	7	8	9	10	12	....
Ell.....each	2.75	4.70	6.75	9.00	13.50	20.00	....
Ell, Reducing....."	3.15	5.40	7.75	10.50	15.50	23.00	....



B208

RIGHT AND LEFT  
ELBOWS

For List of sizes, see B238.

Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	.06	.06	.07	.09	.12	.18	.23	.32	.60	.85

## 45 DEGREE ELBOWS

45° Ells are not made reducing, but regular patterns can be bushed in casting at special prices.

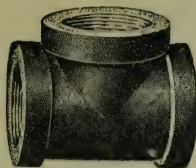


B209

Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Each.....	.06	.06	.07	.10	.12	.19	.24
Size.....inches	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
Each.....	.34	.60	.90	1.25	1.45	2.20	2.50
Size.....inches	6	7	8	9	10	12	....
Each.....	3.45	5.90	8.50	11.25	17.00	25.00	....

Galvanized Cast-Iron Fittings, double the list of black.

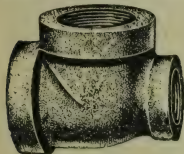
# STANDARD CAST-IRON FITTINGS



B210

## TEES

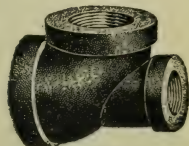
Inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	.08	.08	.09	.12	.15	.23	.29	.41	.73	1.10
Inches.....	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Each.....	1.50	1.75	2.55	3.00	4.00	6.80	9.75	13.00	19.50	29.00



B211

## REDUCING TEES

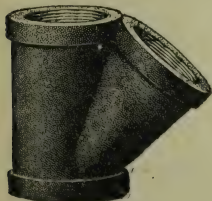
Reducing in run or branch or both.  
For list of sizes see B239.



\*B212

Inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Each.....	.09	.10	.14	.17	.27	.33	.47	.83	1.25	1.75
Inches.....	4	$4\frac{1}{2}$	5	6	7	8	9	10	12	....
Each.....	2.00	2.95	3.50	4.60	7.80	11.25	15.00	22.50	33.50	....

\*Many sizes where there is considerable reduction in the run only, are made as shown B212.



B213

## Y BRANCH

Reducing Y's are made to order only, by bushing straight patterns when casting.

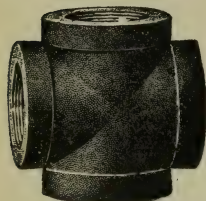
Size inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Y Branch	.20	.28	.34	.54	.66	.94	1.66	2.50	3.50
Reduced..	.23	.33	.40	.62	.76	1.08	1.90	2.90	4.00
Size inches	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Y Branch	4.00	5.90	7.00	9.20	15.60	22.50	33.75	45.00	67.00
Reduced..	4.60	6.80	8.00	10.60	18.00	26.00	39.00	51.75	77.00

Galvanized Cast-Iron Fittings, double the list of black.



## STANDARD CAST-IRON FITTINGS

## STRAIGHT



B214

## CROSS

Size .....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Each .....	.15	.16	.22	.27	.42	.53	.75	1.30	2.00	2.70
Size .....inches	4	$4\frac{1}{2}$	5	6	7	8	9	10	12	....
Each .....	3.15	4.60	5.50	7.25	12.25	17.50	23.50	35.00	52.50	....



B215

## REDUCING CROSS

See list of sizes; B240.

Size .inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Each .....	.18	.25	.30	.46	.60	.83	1.45	2.20	3.00
Size .inches	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Each .....	3.50	5.10	6.00	8.00	13.50	19.25	26.00	38.50	58.00



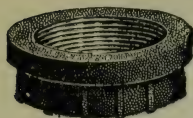
B216

## REDUCING COUPLING

For list of sizes, see B238.

Size.....inches	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
Each .....	.60	.80	1.00	1.35	1.85	2.00
Size.....inches	6	7	8	9	10	12
Each .....	2.70	5.35	6.75	8.35	10.00	15.00

Galvanized Cast-Iron Fittings, double the list of black.

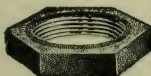


B217

# STANDARD CAST-IRON FITTINGS

## CAPS

Size.....inches	2½	3	3½	4	4½	5
Price.....each	.40	.54	.75	.87	1.05	1.20
Size.....inches	6	7	8	9	10	12
Price.....each	1.55	2.50	2.85	4.75	5.50	7.00

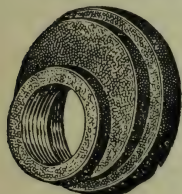


B218

## LOCK NUTS

Size inches	2½	3	3½	4	4½	5	6	7	8	9	10	12
Price each	.27	.34	.47	.64	.85	.90	1.30	1.70	2.35	2.70	3.00	4.00

Galvanized Cast-Iron Fittings, double the list of black.



B220

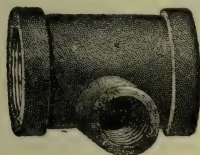
## ECCENTRIC CAP PATTERN REDUCER

(See Malleable Offset Reducers, B177.)

2½x1¼	2½x1½	2½x2	3x2	3x2½	3½x3	3½x2½	4x3½	4x3	5x4	6x4
1.50	1.50	1.50	2.40	2.40	3.00	3.00	4.00	4.00	6.00	8.00

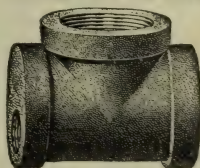
## ECCENTRIC TEES

### ECCENTRIC ON OUTLET



B221

### ECCENTRIC ON RUN



B222

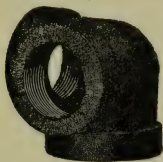
These fittings are designed to prevent the accumulation and lodgement of condensation.

Order must be accompanied with sketch, showing position in which the fitting is to be placed. When B221 is reduced in the run sketch must show which end is reduced.

When B222 is to lie on the side, it is necessary to show which side will be down.

## STANDARD CAST-IRON FITTINGS

## SIDE-OUTLET ELBOW



B223

## SIDE-OUTLET TEE



B224

## SIDE-OUTLET ELBOWS

Inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Each.....	.18	.24	.30	.48	.60	.84	1.50	2.25	3.15	3.60	5.25	6 00	8.25

## SIDE-OUTLET TEES

Inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Each.....	.27	.36	.45	.70	.90	1.25	2.25	3.25	4.50	5.25	7.65	9.00	12.00

Sizes not listed above made to order at special net prices.

## 5-WAY CROSSES

Quoted on application.

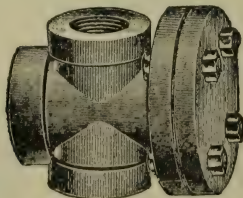


## CAST-IRON OFFSET

B225

$\frac{3}{4}$ -inch to 6-inch pipe sizes to Offset 4-inch, 6-inch, 8-inch, etc., from factory.

Prices on application.

BLOW-OFF  
CROSS

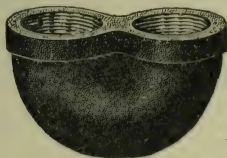
B226

Size.....inches	$3 \times 1\frac{1}{2}$	$3 \times 2$	$4 \times 2$	$4 \times 2\frac{1}{2}$	$5 \times 2\frac{1}{2}$	$5 \times 3$	$6 \times 2\frac{1}{2}$	$6 \times 3$
Price.....each	10.00	10.00	12.00	12.00	18.00	18.00	27.00	27.00

The convenience of this fitting and the ease with which it can be disconnected, when necessity requires boiler to be blown out, is plainly apparent.

# CAST-IRON FITTINGS

## RETURN BENDS.—Close Pattern

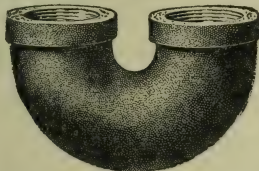


B227

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
R. H.....each	.18	.20	.22	.28	.40	.57	1.20	1.70	5.00
R. and L. or L. H... "	.21	.23	.26	.33	.46	.66	1.40	1.95	5.25
Pitched....."	...	.23	.26	.33	...	...	...	...	...
Cent'r to Cent'r...inches	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{3}{4}$	$4\frac{1}{4}$	6

Pitched Bends, R. H. or R. and L., also Left Hand Ret. Bends are made to order, and list price is same as R. & L. Bends. When ordering pitched Bends, state length of coil to be used in.

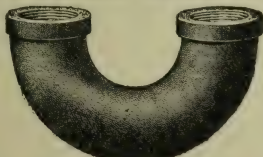
## RETURN BENDS.—Open Pattern



B228

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
R. H.....each	.25	.26	.30	.40	.55	.80	1.35	2.20	5.75
R. and L. or L. H... "	.30	.30	.35	.46	.64	.92	1.55	2.50	6.00
Cent'r to Cent'r...inches	$1\frac{3}{4}$	$1\frac{7}{8}$	$2\frac{3}{8}$	3	$3\frac{1}{2}$	$4\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{2}$	7

## RETURN BENDS.—Special Wide Pattern



B229

Size, in.	1	1	1	1	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	2	2	2	4	4
Blk..ea.	.50	.60	.75	1.00	1.00	1.25	1.60	2.00	2.00	3.00	3.50	6.50	7.50
Galv. "	.90	1.10	1.30	1.60	1.75	2.00	2.60	3.25	3.25	4.50	5.00	10.00	11.00
C. to C...	4	5	6	8	4	6	6	8	6	7	8	$7\frac{1}{2}$	11

Return Bends not listed will be furnished at special net prices.





B230

**CAST-IRON FITTINGS****BACK OUTLET RETURN BENDS**

Close Pattern

Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Right Hand.....each	.38	.42	.60	.80	1.15	2.00	3.00
Right and Left... “	.42	.48	.70	.95	1.30	2.30	3.50
Center to Center inches	$1\frac{7}{8}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{3}{4}$	$4\frac{1}{4}$



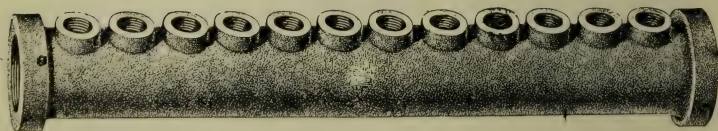
B231

**SIDE-OUTLET RETURN BEND**

From Factory. Prices on Application

**LARGE MANIFOLDS OR BRANCH TEES**

For Dry Kilns or Heating Apparatus



B232

Made with 3-in., 4-in., 5-in., or 6-in. Run, and with from 6 to 24 branches, for 1-in.,  $1\frac{1}{4}$ -in.,  $1\frac{1}{2}$ -in., or 2-in. pipe coils.

For shipment from factory only. Prices on application.



B233

**LONG TURN BASE  
ELBOWS AND TEES**

Quoted on application.



B234

## BRANCH TEES OR MANIFOLDS

### No. 1 FOR CIRCULATION



B235

### No. 2 FOR CIRCULATION



B236

### No. 3 FOR BOX COILS



B237

Branch Tees are carried in stock with all openings threaded right hand, but can be furnished to order tapped any way.

No. 3 is sometimes wanted with left-hand thread in branches for box coils.

Branch Tees carried in stock generally have the inlet tapped one or two sizes larger than the branches.

No. of Branches	1-INCH BRANCHES			1¼-INCH BRANCHES			1½-INCH BRANCHES			2-IN. B'CH'S
	2½ in. Center to Center			3 in. Center to Center			3½ in. Center to Center			4½ in. C. to C.*
	1 in. or 1¼ in. Run	1½ in. Run	2 in. Run	1¼ in. or 1½ in. Run	2 in. Run	2½ in. Run	1½ in. or 2 in. Run	2½ in. Run	3 in. Run	2½ in. or 3 in. Run
2	.90	1.00	1.15	....	....	....	....	....	....	....
3	1.05	1.15	1.35	1.65	1.90	2.40	2.70	3.45	3.80	5.75
4	1.15	1.30	1.60	2.00	2.40	2.85	3.35	4.15	4.60	7.00
5	1.35	1.45	1.85	2.40	2.90	3.55	4.00	5.00	5.50	8.50
6	1.60	1.75	2.10	2.80	3.30	3.95	4.65	5.75	6.25	9.75
7	1.90	2.20	2.45	3.20	3.90	4.20	5.25	6.50	7.25	11.75
8	2.20	2.45	2.75	3.60	4.50	4.95	5.85	7.00	7.75	12.75
9	2.65	2.90	3.40	4.30	5.25	6.15	6.50	8.25	9.00	13.50
10	....	3.30	4.00	4.80	5.85	6.85	7.60	9.25	10.00	15.00
11	....	4.50	4.80	5.00	6.25	7.25	8.00	9.75	10.75	....
12	....	4.75	5.10	5.25	6.50	7.65	8.50	10.50	11.50	....
13	....	5.50	6.00	6.00	7.00	8.25	....	....	....	....
14	....	7.00	7.25	6.75	7.75	9.00	....	....	....	....
15	....	7.50	7.75	7.50	8.50	9.75	....	....	....	....
16	....	8.00	8.25	8.50	9.50	10.75	....	....	....	....

\*Can furnish 2-inch Branch Tees, with 2 or 3½ run. Price on application.

\*Can furnish No. 3 Branch Tees with inlet on side instead of back. Special.

Always order Branch Tees by *size* and *number*, and state size run or inlet desired or preferred.

## SCREWED FITTINGS

The following is a list of what is known by the manufacturers as

### STANDARD SIZES OF STANDARD CAST-IRON SCREWED FITTINGS

Other sizes can be furnished on short notice  
by bushing the regular pattern in the sand.

**Elbows**, straight sizes  $\frac{1}{4}$  to 12-inch inclusive.

**45° Elbows**,  $\frac{3}{8}$  to 12-inch inclusive.

**Right and Left Elbows**,  $\frac{1}{4}$  to 3-inch inclusive.

**Tees**, straight sizes,  $\frac{1}{4}$  to 12-inch inclusive.

**Crosses**, straight sizes,  $\frac{3}{8}$  to 12-inch inclusive.

**Y's**, straight sizes,  $\frac{1}{2}$  to 12-inch inclusive.

**Return Bends**, close  $\frac{1}{2}$  to 3-inch inclusive.

**Return Bends**, open  $\frac{1}{2}$  to 3-inch inclusive.

**Flange Unions**,  $\frac{1}{2}$  to 12-inch inclusive.

**Caps**, 2 to 12-inch inclusive.

**Locknuts**,  $2\frac{1}{2}$  to 12-inch inclusive.

**Plugs**,  $\frac{1}{4}$  to 12-inch inclusive.

## REDUCING ELBOWS

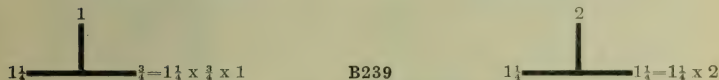
$\frac{1}{2}$ x $\frac{3}{8}$	$1\frac{1}{2}$ x $1\frac{1}{4}$	3 x $2\frac{1}{2}$	5 x 4
$\frac{3}{4}$ x $\frac{1}{2}$	$1\frac{1}{2}$ x 1	3 x 2	6 x 5
1 x $\frac{3}{4}$	$1\frac{1}{2}$ x $\frac{3}{4}$	$3\frac{1}{2}$ x 3	6 x 4
1 x $\frac{1}{2}$	2 x $1\frac{1}{4}$	4 x $3\frac{1}{2}$	8 x 6
$1\frac{1}{4}$ x 1	2 x $1\frac{1}{4}$	4 x 3	
$1\frac{1}{4}$ x $\frac{3}{4}$	2 x 1	4 x $2\frac{1}{2}$	
$1\frac{1}{4}$ x $\frac{1}{2}$	$2\frac{1}{2}$ x 2	$4\frac{1}{2}$ x 4	
	$2\frac{1}{2}$ x $1\frac{1}{2}$		

## REDUCING COUPLINGS

$2\frac{1}{2}$ x 2	4 x $3\frac{1}{4}$	6 x 5
$2\frac{1}{2}$ x $1\frac{1}{2}$	4 x 3	6 x 4
3 x $2\frac{1}{4}$	4 x $2\frac{1}{2}$	6 x 3
3 x 2	4 x 2	7 x 6
$3\frac{1}{2}$ x 3	$4\frac{1}{2}$ x 4	8 x 6
$3\frac{1}{2}$ x $2\frac{1}{2}$	5 x 4	10 x 8
	5 x 3	12 x 10

## REDUCING CAST-IRON TEES

In reading Tees, the run is first named, then the outlet, thus :

[illegible]



5 x 2 $\frac{1}{2}$	6 x 2	8 x 7 x 6
5 x 2	6 x 5 x 6	8 x 6 x 8
5 x 1 $\frac{1}{4}$	6 x 4 x 6	8 x 6 x 7
5 x 1 $\frac{1}{4}$	6 x 3 x 6	8 x 6 x 6
5 x 4 x 5	6 x 2 $\frac{1}{2}$ x 6	8 x 5 x 8
5 x 4 x 4	5 x 6	8 x 5 x 5
5 x 4 x 3	4 x 6	8 x 4 x 8
5 x 4 x 2 $\frac{1}{2}$	6 x 5 x 5	6 x 8
5 x 4 x 2		
5 x 3 x 5	7 x 6	10 x 8
5 x 3 x 4	7 x 5	10 x 6
5 x 3 x 3	7 x 4	10 x 5
5 x 3 x 2 $\frac{1}{2}$	7 x 6 x 7	10 x 4
5 x 3 x 2	7 x 6 x 6	10 x 8 x 8
5 x 2 $\frac{1}{2}$ x 5	7 x 6 x 5	
5 x 2 $\frac{1}{2}$ x 4	7 x 5 x 5	
5 x 2 $\frac{1}{2}$ x 3	6 x 7	12 x 10
5 x 2 x 5		12 x 8
4 x 5		12 x 6
	8 x 6	12 x 8 x 10
	8 x 5	12 x 8 x 8
	8 x 4	
6 x 5	8 x 3 $\frac{1}{2}$	
6 x 4	8 x 3	
6 x 3 $\frac{1}{2}$	8 x 2 $\frac{1}{2}$	
6 x 3	8 x 2	
6 x 2 $\frac{1}{2}$		

## B240

A cross-shaped diagram with the number '1' at the top, bottom, and right, and '1 1/2' at the left.

 $1\frac{1}{2} \times 1\frac{1}{4} \times 1$  $1\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{4} \times 1$  $1\frac{1}{2} \times 1\frac{1}{4}$ 

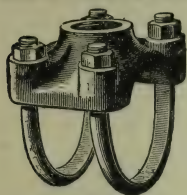
$\frac{1}{2} \times$	$\frac{1}{8}$	$\frac{1}{4} \times$	$\frac{3}{4}$	$2 \times 1$	$3 \times 2$	$4 \times 3\frac{1}{2}$	$6 \times 5$	$8 \times 6$
$\frac{1}{2} \times$	$\frac{1}{8}$	$\frac{1}{4} \times$	$\frac{3}{4}$	$2 \times \frac{3}{4}$	$3 \times 1\frac{1}{4}$	$4 \times 3$	$6 \times 4$	$8 \times 7$
$\frac{3}{4} \times$	$\frac{3}{8}$	$\frac{1}{2} \times$	$1\frac{1}{4}$	$2\frac{1}{2} \times 2$	$3 \times 1\frac{1}{4}$	$4 \times 2\frac{1}{2}$	$6 \times 3\frac{1}{2}$	$10 \times 7$
$\frac{3}{4} \times$	$\frac{3}{8}$	$\frac{1}{2} \times$	$1\frac{1}{4}$	$2\frac{1}{2} \times 1\frac{1}{4}$	$3 \times 1$	$4 \times 2$	$6 \times 3$	$10 \times 8$
$\frac{3}{4} \times$	$\frac{3}{8}$	$\frac{1}{2} \times$	$1\frac{1}{4}$	$2\frac{1}{2} \times 1$	$3 \times \frac{3}{4}$	$5 \times 4$	$6 \times 2\frac{1}{2}$	
$1 \times$	$2\frac{1}{2}$	$1 \times$	$1\frac{1}{2}$	$2\frac{1}{2} \times \frac{3}{4}$	$3\frac{1}{2} \times 3$	$5 \times 3$	$7 \times 2$	$12 \times 8$
$1 \times$	$2\frac{1}{2}$	$1 \times$	$1\frac{1}{2}$	$2\frac{1}{2} \times 1$	$3\frac{1}{2} \times 2\frac{1}{2}$	$5 \times 2\frac{1}{2}$	$7 \times 5$	$12 \times 10$
$1 \times$	$2\frac{1}{2}$	$1 \times$	$1\frac{1}{2}$	$2\frac{1}{2} \times \frac{3}{4}$	$3\frac{1}{2} \times 2$	$5 \times 2$	$7 \times 6$	
$1\frac{1}{4} \times 1$		$2 \times 1\frac{1}{4}$		$3 \times 2\frac{1}{2}$				

Bushings reducing one size only, up to and including 2 inch, can be furnished in Malleable Iron. All other sizes are made in Cast-Iron.

$\frac{1}{2} \times$	$\frac{1}{4}$	$1\frac{1}{2} \times$	$3\frac{3}{4}$	$3 \times 2$	$4 \times 2\frac{1}{2}$	$5 \times 3$	$7 \times 4\frac{1}{2}$	$9 \times 7$
$\frac{1}{2} \times$	$\frac{1}{4}$	$1\frac{1}{2} \times$	$3\frac{3}{4}$	$3 \times 1\frac{1}{2}$	$4 \times 2$	$5 \times 2\frac{1}{2}$	$7 \times 4$	$9 \times 6$
$\frac{3}{4} \times$	$\frac{3}{4}$	$2 \times$	$1\frac{1}{4}$	$3 \times 1\frac{1}{4}$	$4 \times 1\frac{1}{2}$	$5 \times 2$	$7 \times 3\frac{1}{2}$	$10 \times 8$
$\frac{3}{4} \times$	$\frac{3}{4}$	$2 \times$	$1\frac{1}{4}$	$3 \times 1$	$4 \times 1\frac{1}{4}$		$7 \times 3$	$10 \times 6$
$1 \times$	$1\frac{1}{2}$	$2 \times$	$2\frac{1}{2}$	$3\frac{1}{2} \times 3$	$4 \times 1$	$6 \times 5$	$7 \times 2\frac{1}{2}$	
$1 \times$	$1\frac{1}{2}$	$2 \times$	$2\frac{1}{2}$	$3\frac{1}{2} \times 2\frac{1}{2}$		$6 \times 4\frac{1}{2}$	$7 \times 2$	$12 \times 10$
$1 \times$	$1\frac{1}{2}$	$2 \times$	$2\frac{1}{2}$	$3\frac{1}{2} \times 2$	$4\frac{1}{2} \times 4$	$6 \times 4$		$12 \times 8$
		$2\frac{1}{2} \times 1\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{1}{2} \times 1\frac{1}{4}$	$4\frac{1}{2} \times 3\frac{1}{2}$	$6 \times 3\frac{1}{2}$	$8 \times 7$	$12 \times 6$
$1\frac{1}{2} \times$	$3\frac{1}{4}$	$2\frac{1}{2} \times 1\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{1}{2} \times 1\frac{1}{4}$	$4\frac{1}{2} \times 3$	$6 \times 3$	$8 \times 6$	
$1\frac{1}{2} \times$	$3\frac{1}{4}$	$2\frac{1}{2} \times 1\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{1}{2} \times 1$	$4\frac{1}{2} \times 2\frac{1}{2}$	$6 \times 2\frac{1}{2}$	$8 \times 5$	
$1\frac{1}{2} \times$	$3\frac{1}{4}$	$2\frac{1}{2} \times 1\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{1}{2} \times 1$		$6 \times 2$	$8 \times 4$	
$1\frac{1}{2} \times$	$3\frac{1}{4}$	$2\frac{1}{2} \times$	$3\frac{1}{4}$		$5 \times 4\frac{1}{2}$		$8 \times 3$	
$1\frac{1}{2} \times 1$		$3 \times 2\frac{1}{2}$		$4 \times 3\frac{1}{2}$	$5 \times 4$	$7 \times 6$		
				$4 \times 3$	$5 \times 3\frac{1}{2}$	$7 \times 5$	$9 \times 8$	

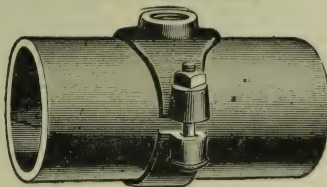
# PIPE SADDLES AND CLAMPS

Cast and Malleable  
Saddles—Double Strap



B241

Malleable  
Water Pipe Clamps



B242

## DOUBLE STRAP MALLEABLE AND CAST-IRON PIPE SADDLES—B241

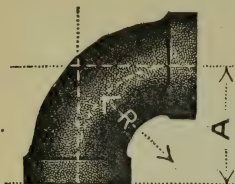
Size Inches	Tapped	Each	Size Inches	Tapped	Each
2	1 to 1½	1.00	6	1 to 2	2.75
2½	1 to 1½	1.25	6	2½ to 4	5.75
3	1 to 2	1.25	7	1 to 3	6.50
4	1 to 2	1.50	8	2 to 4	6.50
4½	.....	...	10	2 to 4	10.00
5	1 to 2	2.75	12	3 to 6	14.00

## SINGLE STRAP CAST SADDLES (Not Illustrated)

1x¾ to ¾ in. 55c. 1¼x¾ to 1 in. 65c. 1½x¾ to 1 in. 70c. 2x1 to 1¼ 75c.

## MALLEABLE IRON WATER PIPE CLAMPS—B242

No.	CLAMPS WILL FIT					Price Each	No.	CLAMPS WILL FIT					Price Each
	Outside Diam. of Circle Inches	Size Wrought Iron Pipe Inches	Size Outside Diam. Casing Inches	Size Cast-Iron Pipe Inches	Tapped for Opening Inches			Outside Diam. of Circle Inches	Size Wrought Iron Pipe Inches	Size Outside Diam. Casing Inches	Size Cast- Iron Pipe, In.	Tapped for Opening Inches	
1	2	2	2½	...	½ to 1	1.00	17	6	..	6	5	2	2.40
2	2	2½	3	2	1 to 1½	1.25	18	6	..	6	5	3	4.50
3	3	3	3½	...	¾ and 1	1.25	19	6	6	6	..	½ to 1½	2.25
4	3	3	3½	...	1½ to 2	1.50	20	6	6	6	..	2	2.50
5	4	3½	4	3	¾ to 1	1.50	21	6	6	6	..	3	5.00
6	4	3½	4	3	1½ to 2	1.75	22	7	..	7	6	½ to 1½	2.50
7	4½	4	4½	...	¾ to 1½	1.75	23	7	..	7	6	2	2.70
8	4½	4	4½	...	2	2.00	24	7	..	7	6	3	5.00
9	4½	4	4½	...	3	4.00	25	7	7	7	..	½ to 1½	2.50
10	5	4½	5	4	¾ to 1½	1.80	26	7	7	7	..	2	2.70
11	5	4½	5	4	2	2.15	27	7	7	7	..	3	5.00
12	5	4½	5	4	3	4.00	28	8	..	8	7	½ to 1½	4.50
13	5½	5	5½	...	¾ to 1½	1.80	29	8	..	8	7	2	5.00
14	5½	5	5½	...	2	2.15	30	8	..	8	7	3	5.50
15	5½	5	5½	...	3	4.00	31	8	8	8	..	2 to 3	5.50
16	6	....	6	5	¾ to 1½	2.00	32	8	8	8	..	4	6.00



## LONG SWEEP CAST-IRON FITTINGS

Suitable for Working Pressure up to 150 pounds

NO. 1

### LONG TURN ELBOW

B243

Inches.....	1	1½	1½	2	2½	3	3½	4
Each.....	.32	.40	.55	.80	1.20	2.25	3.25	3.50
*Reducing.....	.48	.60	.83	1.20	1.80	3.38	4.88	5.25
Size.....inches	4½	5	6	7	8	9	10	12
Each.....	5.50	6.50	8.75	13.00	17.00	25.50	30.00	40.00
*Reducing.....	8.25	9.75	13.13	19.50	25.50	38.25	45.00	60.00



NO. 2

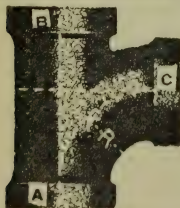
### DOUBLE BRANCH ELBOW

B244

See B289 for Twin Ells.

When ordering Reducing double ell, use letters as illustrated, writing thus, A3x B2x C1½ inches. See note bottom of page.

Inches.....	1	1½	1½	2	2½	3	3½	4
Each.....	.64	.80	1.10	1.60	2.40	4.50	6.50	7.00
*Reducing.....	.96	1.20	1.65	2.40	3.60	6.75	9.75	10.50
Inches.....	4½	5	6	7	8	9	10	12
Each.....	11.00	13.00	17.50	26.00	34.00	51.00	60.00	80.00
*Reducing.....	16.50	19.50	26.25	39.00	51.00	76.50	90.00	120.00



NO. 3

### SINGLE SWEEP TEE

B245

To read Reducing, see note bottom of page.

Inches.....	1	1½	1½	2	2½	3	3½	4
Each.....	.48	.60	.82	1.20	1.80	3.40	4.90	5.25
*Reducing.....	.72	.90	1.23	1.80	2.70	5.10	7.35	7.88
Inches.....	4½	5	6	7	8	9	10	12
Each.....	8.25	9.75	13.25	19.50	25.50	38.00	45.00	60.00
*Reducing.....	12.38	14.63	19.88	29.25	38.25	57.00	67.50	90.00

\*Reducing Fittings are made by bushing regular patterns when Casting.

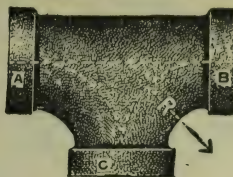
Fittings for Extra High Pressure quoted on application.

Galvanized Long Sweep Fittings to order at special price.

NOTE.—Read Reducing Fitting Openings in order as indicated A. B. C. on cuts. There is no universal rule for reading double branch ells. If possible send sketch.

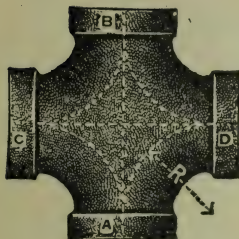
STRAIGHT BACK TEE

CAST IRON  
SCREWED



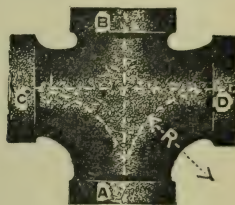
B246

LONG SWEEP  
FITTINGS



B247

LONG  
SWEEP  
CROSSES



B248

Read Reducing Fittings in the order indicated. A, B, C, D. A, B indicates the run.

Size.....inches	1	1¼	1½	2	2½	3	3½	4
Tee.....each	.64	.80	1.10	1.60	2.40	4.50	6.50	7.00
“ *Reducing “	.96	1.20	1.65	2.40	3.60	6.75	9.75	10.50
Cross.....each	.....	1.10	1.50	2.15	3.20	6.00	8.75	9.50
“ *Reducing “	.....	1.65	2.25	3.23	4.80	9.00	13.13	14.25

Size.....inches	4½	5	6	7	8	9	10	12
Tee.....each	11.00	13.00	17.50	26.00	34.00	51.00	60.00	80.00
“ *Reducing “	16.50	19.50	26.25	39.00	51.00	76.50	90.00	120.00
Cross.....each	15.00	17.50	24.00	35.00	45.00	68.00	80.00	107.00
“ *Reducing “	22.50	26.25	36.00	52.50	67.50	102.00	120.00	160.50

\*Reducing Tees and Crosses made to order only, by bushing in the sand.



ELL. B249

SPECIAL  
FITTINGS

FLANGED AND  
SCREWED

DRILLED

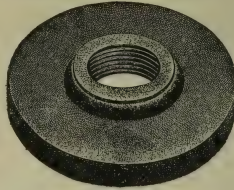


TEE. B250

Size.....inches	2	2½	3	3½	4	5	6	7	8
Ell, Flng'd One End.....	5.00	5.50	6.00	6.50	7.50	10.00	14.00	25.00	30.00
Ell, “ Two Ends.....	6.00	6.75	7.50	8.50	10.00	12.50	17.50	30.00	35.00
Tees, “ One or Two Ends	8.00	9.00	10.00	11.00	12.00	15.00	22.00	40.00	45.00
Tees, “ Three “	9.00	10.00	11.50	13.00	15.00	18.00	26.00	45.00	50.00
Crosses, “ Two or Three “	11.00	12.50	13.50	15.00	17.00	22.00	30.00	55.00	65.00
Crosses, “ Three or Four “	12.00	13.50	15.00	17.00	20.00	25.00	35.00	60.00	70.00

Can reduce screw end by bushing in sand, at same price. Send sketch.



**FLANGE DRILLED  
FOR SCREWS****B251****COMMON CAST FLANGE****B252****CURVED FLANGE****B253****DRILLED FLOOR FLANGES B251**

With Screw Holes

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each.....	.14	.14	.18	.22	.25	.31	.45
Diam.....inches	3	$3\frac{1}{2}$	$3\frac{3}{4}$	4	$4\frac{1}{2}$	$4\frac{3}{4}$	6

**COMMON CAST FLANGES B252**

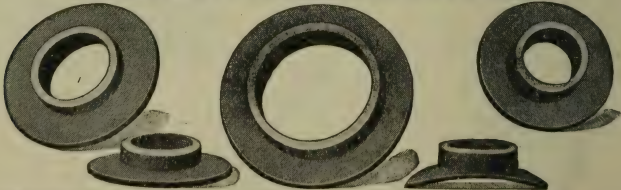
Pipe Size...inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Diam. and Price..						
4" .16	4" .16	$4\frac{1}{2}$ " .22	$5\frac{1}{2}$ " .35	6" .42	$6\frac{1}{2}$ " .50	
5" .30	5" .30	5" .30	6" .42	7" .62	7" .62	8" .82
6" .42	6" .40	6" .40	7" .60	8" .90	8" .90	
Pipe Size...inches	$3\frac{1}{2}$	4	$4\frac{1}{4}$	5	6	7
Diam. and Price..						
8" .90	8" .90	9" 1.15	10" 1.50	10" 1.50	11" 1.75	12" 2.20
9" 1.15	9" 1.50	10" 1.50	11" 1.75	12" 2.20	14" 3.25	15" 4.00
10" 1.50	10" 1.50	11" 1.75	12" 2.20	14" 3.25	15" 4.00	
Pipe Size...inches	8	9	10	12	14	16
Diam. and Price..						
13" 2.00	15" 4.00	16" 5.00	18" 7.00	20" 8.50	$22\frac{1}{2}$ " 25.00	
14" 3.25	16" 5.00	17" 5.00	19" 7.50	21" 9.50	$23\frac{1}{2}$ " 28.00	
16" 5.00	17" 5.75	19" 7.50	20" 8.50	.....	.....	

**CURVED FLANGES B253**

State diameter of flange, size of pipe threaded for and diameter of circle to fit.

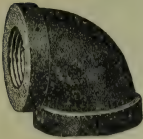
Pipe Size .....inches	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5	6	7	8
Diam. of Flange.....inches	6	7	8	9	9	11	12	13	14

Prices on application. Can furnish with special wide boss, for any size pipe.

**FORGED STEEL PIPE FLANGES B254**

Size Pipe inches	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Diameter Flange..ins.	9	$9\frac{1}{2}$	10	$10\frac{1}{2}$	$11\frac{1}{2}$	$12\frac{1}{2}$	14	15	16	$17\frac{1}{2}$	20
Thickness " " "	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$
Depth " " "	$1\frac{1}{2}$	$1\frac{1}{2}$	2	2	2	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$
Bent or } Threaded, ea.	2.80	3.20	3.50	4.20	5.00	6.00	9.00	12.00	30.00	35.00	50.00
Flat } Not " "	2.65	3.00	3.35	4.00	4.75	5.70	8.60	11.40	27.00	32.00	46.00

Smaller sizes quoted on application.



B265

CASING FITTINGS  
CAST IRON  
For Fine Thread

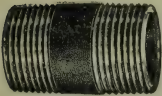


B266

WELL CASING

Inside Diameter. . . . . inches	4	4½	4½	4¾	5	5 3/16, 5 5/8	6¼, 6 5/8	7 5/8
Elbows . . . . . Each	2.50	2.50	3.00	3.00	3.50	4.00	7.00	10.00
Elbows, reducing . . . . . "	3.00	3.00	3.75	3.75	4.35	5.00	8.75	12.50
Elbows, 45° . . . . . "	3.75	3.75	4.00	4.00	4.50	5.50	9.00	13.00
Tees . . . . . "	3.50	3.50	4.00	4.25	5.00	5.50	10.00	15.00
Tees, reducing . . . . . "	4.35	4.35	5.00	5.25	6.25	6.75	12.50	18.75
Crosses . . . . . "	5.00	5.00	5.70	6.00	7.00	7.80	14.00	20.00
Crosses, reducing . . . . . "	6.25	6.25	7.00	7.50	8.75	9.70	17.50	25.00
Plugs . . . . . "	1.35	1.35	1.75	1.75	2.00	2.40	3.75	5.50
Bushings . . . . . "	1.50	1.50	1.85	1.85	2.00	2.50	3.75	5.50
Flange Unions . . . . . "	4.50	4.50	5.00	5.00	5.50	6.50	8.00	10.00
Reducers . . . . . "	2.75	2.75	3.00	3.00	3.50	4.00	8.00	10.00
Caps . . . . . "	1.60	1.60	2.00	2.00	2.15	2.35	4.00	4.35
Y's . . . . . "	8.00	8.00	9.00	9.00	10.00	12.00	17.00	25.00

If with Standard Pipe Thread in one or more openings, add 25% to list.  
Other Sizes Quoted on Application  
Two-hole Bushings and Cap (tapped for 2-in. or 3-in. pipe) quoted on application.



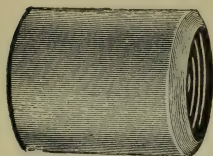
WROUGHT FINE THREAD CASING  
NIPPLES B267

Size . . . . . inches	4	4½	4½	4¾	5	5 5/8	6¼	6 5/8
Close or short . . . . . each	2.35	2.40	2.40	2.45	2.55	3.25	3.45	4.50
Shoulder or long . . . . . "	2.50	2.60	2.60	2.70	2.85	3.50	3.80	4.80
6 inches long . . . . . "	2.60	2.70	2.70	2.80	2.95	3.65	4.00	5.05
7 inches long . . . . . "	2.75	2.80	2.80	2.95	3.10	3.80	4.20	5.30



CASING COUPLING B268  
WROUGHT, FOR FINE THREAD WELL  
CASING

Nom. Inside Diam. Casing Inches	Outside Diam. Coupling Inches	Price Each	Nom. Inside Diam. Casing Inches	Outside Diam. Coupling Inches	Price Each
2	2 3/8	.16	4 3/8	5 1/8	.85
2 1/8	3	.20	5	6	.90
2 1/4	3 1/8	.25	5 1/8	6 1/8	1.00
2 3/8	3 1/4	.30	5 1/4	6 1/4	1.20
3	3 3/8	.35	5 3/8	6 3/8	1.35
3 1/8	4	.40	6	7	1.50
3 1/4	4 1/8	.46	6 1/8	7 1/8	1.65
3 3/8	4 1/4	.52	6 3/8	7 3/8	1.75
4	4 3/8	.60	7	8	2.25
4 1/8	5	.68	8	9 1/8	2.85
4 1/4	5 1/8	.80	9	10 1/8	3.95



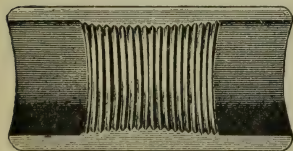
B271

## WROUGHT IRON PIPE COUPLINGS

PLAIN

Size.....inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Black.....each	.05	.05	.06	.07	.10	.13	.17	.21	.28	.40	.60
Galvanized....."	.06	.06	.08	.10	.13	.18	.25	.32	.40	.55	.80
R. and L. Black "	.07	.07	.08	.11	.15	.20	.25	.30	.50	.85	1.20
Outside diam., inches	$\frac{19}{32}$	$\frac{25}{32}$	$\frac{29}{32}$	$1\frac{3}{32}$	$1\frac{11}{32}$	$1\frac{21}{32}$	2	$2\frac{9}{32}$	$2\frac{13}{16}$	$3\frac{9}{32}$	$4\frac{1}{64}$
Threads, per in.....	27	18	18	14	14	$11\frac{1}{2}$	$11\frac{1}{2}$	$11\frac{1}{2}$	$11\frac{1}{2}$	8	8

Size.....inches	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Black.....each	.80	1.00	1.50	1.65	2.40	3.25	4.25	5.50	7.50	10.00
Galvanized.... "	1.05	1.40	2.00	2.25	3.25	....	....	....	....	....
R. and L. Black "	1.60	2.00	....	....	....	....	....	....	....	....
Outside diam., ins.	$4\frac{1}{2}$	$5\frac{3}{32}$	$5\frac{17}{32}$	$6\frac{1}{4}$	$7\frac{11}{32}$	$8\frac{11}{32}$	$9\frac{7}{16}$	$10\frac{15}{32}$	$11\frac{1}{2}$	$13\frac{35}{32}$
Threads, per in.....	8	8	8	8	8	8	8	8	8	8



B272

## LONG WROUGHT IRON RECESSED COUPLING

FOR TUBULAR WELL USES, ETC.

HYDRAULIC COUPLING—RECESSED

Pipe Size....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Black.....each	.25	.30	.35	.45	.55	.70	.95	1.40	1.85	2.25
Galvanized... "	.30	.35	.40	.55	.70	.90	1.20	1.70	2.15	3.25
Length.....inches	1.88	2.13	2.38	2.63	2.94	3.13	3.50	3.69	4.25	4.25

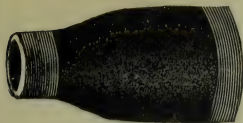
Diameter is about the same as Standard Couplings B271. Hydraulic Couplings have same number of threads to the inch as the Standard Coupling B271.

## WROUGHT RECESSED COUPLINGS

FOR GAS AND OIL WELL TUBING, DRIVE PIPE, AND LINE PIPE

B273

Size.....inches	2	$2\frac{1}{2}$	3	4	5	6	8	10	12
Black.....each	.40	.60	.80	1.50	2.40	2.80	4.00	6.00	8.00
Galvanized....."	.57	.85	1.15	2.15	3.45	4.00	5.80	8.75	11.15



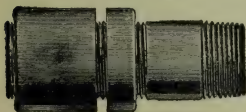
## WROUGHT SWEDGE NIPPLES

B274

Size Inches	Price Black Each	Size Inches	Price Black Each	Size Inches	Price Black Each	Size Inches	Price Black Each
2 x 1	\$1.15	4 x 2½	\$2.50	5 x 4½	\$3.00	8 x 4	\$8.25
2 x 1¼	1.10	4 x 3	2.25	6 x 2	5.50	8 x 6	7.50
2 x 1½	1.00	4 x 3½	2.15	6 x 2½	5.25	10 x 4	15.00
2½ x 1½	1.25	4½ x 2	3.00	6 x 3	5.10	10 x 6	13.50
2½ x 2	1.15	4½ x 2½	2.85	6 x 3½	5.00	10 x 8	12.00
3 x 1½	2.00	4½ x 3	2.75	6 x 4	4.75	12 x 4	22.00
3 x 2	1.75	4½ x 4	2.50	6 x 4½	4.50	12 x 6	20.00
3 x 2½	1.65	5 x 2	4.00	6 x 5	4.25	12 x 8	18.25
3½ x 2	2.00	5 x 2½	3.75	7 x 4	6.75	12 x 10	16.75
3½ x 2½	1.85	5 x 3	3.50	7 x 5	6.50	.....	.....
3½ x 3	1.75	5 x 3½	3.35	7 x 6	6.00	.....	.....
4 x 2	2.75	5 x 4	3.25	8 x 2	8.50	.....	.....

For Swedged Nipples with Casing Thread, Use Pipe Size List as Follows

Casing Size, inches	3	3¼	3½	3¾	4	4¼	4½	4¾	5	5½	5¾	6¼	6½	7½	8¼
Pipe Size....inches	3	3½	4	4	4	4	5	5	5	6	6	6	8	8	8



## LONG SCREW

WITH COUPLING AND LOCK-NUT  
FACED

B275

Size....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Black....each	.30	.35	.40	.55	.75	1.00	1.30	1.70	2.70	3.70	5.40	6.60
Galv.... "	.35	.40	.50	.66	1.00	1.25	1.60	2.10	3.10	4.70	6.75	8.25
Length, inches	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9

## LOCK-NUT NIPPLES

Made to Order and Charged at Special Net Prices

## STANDARD THREADS ON WROUGHT PIPE

Inches.....	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	.05	.05	.05	.05	.05	.06	.07	.08	.10	.15	.20
Inches.....	3½	4	4½	5	6	7	8	9	10	12	14
Each.....	.25	.35	.45	.55	.70	.85	1.00	1.25	1.50	2.50	3.50

Casing Threads, 3 and 3¼ in., 35c.; 4¼ and 4½ in., 50c.; 5½, 6, and 6¼ in., \$1.00.

## LOCK-NUT THREADS

Inches....	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Each.....	.10	.10	.10	.10	.12	.14	.16	.20	.30	.40	.50	.70



## WROUGHT NIPPLES

CLOSE NIPPLE

LONG OR SHOULDER NIPPLE



B277

## STANDARD LIST

(Stock Length.)



B278

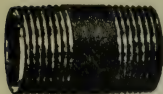
## BLACK RIGHT-HAND NIPPLES

Pipe Size, Inches	Lengths		PRICE	Lengths		PRICE	PRICE OF EXTRA LONG NIPPLES.										
	Close	Short		Long	Nipples		LENGTH—INCHES										
							4	5	6	7	8	9	10	11	12		
$\frac{1}{8}$	$\frac{1}{2}$	$1\frac{1}{2}$	.04	2	$2\frac{1}{2}$	$3\frac{1}{2}$	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19	
$\frac{1}{4}$	$\frac{3}{4}$	$1\frac{1}{2}$	.04	2	$2\frac{1}{2}$	$3\frac{1}{2}$	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19	
$\frac{3}{8}$	1	$1\frac{1}{2}$	.04	2	$2\frac{1}{2}$	$3\frac{1}{2}$	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19	
$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	.05	2	$2\frac{1}{2}$	$3\frac{1}{2}$	.07	.08	.10	.12	.14	.16	.18	.20	.22	.23	
$\frac{3}{4}$	$1\frac{1}{2}$	2	.06	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.09	.....	.11	.13	.17	.18	.20	.22	.24	.26	
1	$1\frac{1}{2}$	2	.08	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.13	.....	.15	.18	.23	.25	.28	.31	.34	.36	
$1\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	.11	3	$3\frac{1}{2}$	4	.17	.....	.20	.24	.29	.33	.36	.40	.44	.47	
$1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	.13	3	$3\frac{1}{2}$	4	.20	.....	.25	.29	.36	.40	.45	.50	.54	.59	
2	2	$2\frac{1}{2}$	.18	3	$3\frac{1}{2}$	4	.27	....	.32	.38	.50	.54	.59	.65	.72	.77	
$2\frac{1}{2}$	$2\frac{1}{2}$	3	.39	$3\frac{1}{2}$	4	$4\frac{1}{2}$	.59	.....	.....	.68	.90	.97	1.06	1.17	1.26	1.35	
3	$2\frac{1}{2}$	3	.48	$3\frac{1}{2}$	4	$4\frac{1}{2}$	.72	.....	.....	.85	1.08	1.20	1.33	1.45	1.58	1.70	
$3\frac{1}{2}$	$2\frac{1}{2}$	4	.75	$4\frac{1}{2}$	5	$5\frac{1}{2}$	1.05	.....	.....	.....	1.30	1.45	1.60	1.75	1.90	2.05	
4	3	4	.85	$4\frac{1}{2}$	5	$5\frac{1}{2}$	1.20	.....	.....	.....	1.52	1.69	1.87	2.05	2.22	2.40	
$4\frac{1}{2}$	3	4	1.25	$4\frac{1}{2}$	5	$5\frac{1}{2}$	1.70	.....	.....	.....	2.25	2.50	2.75	2.95	3.17	3.40	
5	$3\frac{1}{2}$	$4\frac{1}{2}$	1.55	5	$5\frac{1}{2}$	6	2.45	.....	.....	.....	2.58	2.83	3.10	3.35	3.60	3.85	
6	$3\frac{1}{2}$	$4\frac{1}{2}$	1.85	5	$5\frac{1}{2}$	6	2.90	.....	.....	.....	3.05	3.35	3.70	4.00	4.30	4.65	
7	$3\frac{1}{2}$	5	3.20	.....	.....	.....	.....	.....	.....	.....	4.05	4.45	4.90	5.30	5.75	6.15	
8	$3\frac{1}{2}$	5	3.55	.....	.....	.....	.....	.....	.....	.....	4.05	4.55	5.05	5.50	6.00	6.50	
9	4	5	5.25	.....	.....	.....	.....	.....	.....	.....	.....	6.50	7.10	7.75	8.40	9.00	
10	4	5	6.75	.....	.....	.....	.....	.....	.....	.....	.....	8.25	8.90	9.70	10.40	11.15	
12	4	5	8.00	.....	.....	.....	.....	.....	.....	.....	.....	10.00	10.80	11.75	12.70	13.65	

Special Lengths not listed above made to order at special net prices. Longer than 12 inches, charged as cut pipe and threads.

## EXTRA HEAVY NIPPLES

Take double the Standard list. Discount is special, depending on quantity ordered



# WROUGHT NIPPLES RIGHT AND LEFT, BLACK

B279

Pipe Size Inches	Lengths		PRICE	Lengths				PRICE	PRICE OF EXTRA LONG NIPPLES										
	Close	Short		Long Nipples					Length, Inches										
									4	5	6	7	8	9	10	11	12		
$\frac{1}{8}$	$\frac{3}{4}$	$1\frac{1}{2}$	.05	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27		
$\frac{1}{4}$	$\frac{7}{8}$	$1\frac{1}{2}$	.05	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27		
$\frac{3}{8}$	1	$1\frac{1}{2}$	.05	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27		
$\frac{1}{2}$	$1\frac{1}{8}$	$1\frac{1}{2}$	.07	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.10	.11	.13	.16	.18	.21	.24	.27	.29	.31		
$\frac{3}{4}$	$1\frac{3}{8}$	2	.08	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	.12	..	.15	.17	.23	.25	.27	.29	.32	.35		
1	$1\frac{1}{2}$	2	.11	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	.18	..	.20	.24	.31	.33	.37	.41	.45	.48		
$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{2}$	.15	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	.23	..	.27	.32	.39	.45	.50	.55	.60	.65		
$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{2}$	.18	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	.27	..	.34	.39	.48	.52	.60	.67	.72	.80		
2	2	$2\frac{1}{2}$	.24	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	.36	..	.43	.51	.67	.72	.80	.87	.96	1.03		
$2\frac{1}{2}$	$2\frac{1}{2}$	3	.52	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	.79	..	..	.91	1.20	1.30	1.40	1.55	1.68	1.80		
3	$2\frac{1}{2}$	3	.65	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	.96	..	..	1.13	1.44	1.60	1.77	1.93	2.10	2.27		
$3\frac{1}{2}$	$2\frac{3}{4}$	4	1.00	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	1.40	..	..	..	1.75	1.95	2.15	2.35	2.55	2.75		
4	3	4	1.15	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	1.60	..	..	..	2.00	2.25	2.50	2.75	3.00	3.25		

Add 60 per cent to above prices for Galvanized Right and Left Nipples and discount is special according to quantity ordered.

## GALVANIZED NIPPLES, RIGHT HAND

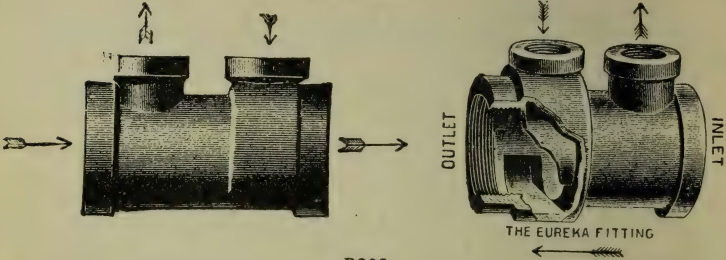
B280

Pipe Size Inches	Lengths		PRICE	Lengths				PRICE	PRICE OF EXTRA LONG NIPPLES										
	Close	Short		Long Nipples					Length, Inches										
									4	5	6	7	8	9	10	11	12		
$\frac{1}{8}$	$\frac{3}{4}$	$1\frac{1}{2}$	.06	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34		
$\frac{1}{4}$	$\frac{3}{8}$	$1\frac{1}{2}$	.06	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34		
$\frac{3}{8}$	1	$1\frac{1}{2}$	.06	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34		
$\frac{1}{2}$	$1\frac{1}{8}$	$1\frac{1}{2}$	.06	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	.11	.13	.16	.18	.23	.26	.28	.31	.33	.36		
$\frac{3}{4}$	$1\frac{3}{8}$	2	.08	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	.14	..	.18	.21	.26	.29	.32	.35	.38	.41		
1	$1\frac{1}{2}$	2	.11	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	.19	..	.24	.28	.34	.38	.42	.47	.51	.55		
$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{2}$	.17	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	.29	..	.32	.38	.45	.51	.57	.63	.69	.75		
$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{2}$	.21	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	.35	..	.39	.46	.55	.63	.70	.77	.84	.91		
2	2	$2\frac{1}{2}$	.27	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	.47	..	.52	.61	.74	.83	.93	1.03	1.13	1.23		
$2\frac{1}{2}$	$2\frac{1}{2}$	3	.56	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	.86	..	..	1.00	1.26	1.41	1.56	1.71	1.86	2.01		
3	$2\frac{1}{2}$	3	.70	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	1.10	..	..	1.30	1.60	1.80	2.00	2.20	2.40	2.60		
$3\frac{1}{2}$	$2\frac{3}{4}$	4	1.20	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	1.70	..	..	..	2.10	2.35	2.60	2.85	3.15	3.40		
4	3	4	1.35	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	1.87	..	..	..	2.30	2.60	2.90	3.20	3.50	3.80		
$4\frac{1}{2}$	3	4	1.85	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	2.60	..	..	..	3.30	3.65	4.05	4.45	4.85	5.25		
5	$3\frac{3}{4}$	$4\frac{1}{2}$	2.30	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	3.15	..	..	..	3.75	4.20	4.60	5.00	5.40	5.85		
6	$3\frac{3}{4}$	$4\frac{1}{2}$	2.80	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	4.25	..	..	..	4.50	5.00	5.55	6.05	6.60	7.15		
7	$3\frac{3}{4}$	5	4.25	..	..	..	..	..	..	..	..	4.95	5.60	6.35	7.05	7.75	8.45		
8	$3\frac{3}{4}$	5	5.00	..	..	..	..	..	..	..	..	5.80	6.65	7.50	8.35	9.25	10.10		

Discount is special, according to quantity ordered.

**"EUREKA" COMBINATION CIRCULATION FITTING**  
**FOR SINGLE PIPE HOT WATER WORK**

CAST IRON



B283

Size of Main .....	inches	2	2½	3	3	3½	4
Size of Branches .....	inches	¾ to 1½	¾ to 2	¾ to 2	2½	¾ to 2	¾ to 2
Length, End to End .....	"	8½	8½	9¼	10½	9¼	9¼
Center to Center Branches...	"	4½	4½	4½	5¾	4½	4½
Price .....	each	.90	1.30	1.50	1.90	1.90	2.20
Size of Main .....	inches	4	4½	4½	5	5	6
Size of Branches .....	inches	2½	1 to 2	2½	1 to 2	2½	1 to 2
Length, End to End .....	"	11½	9¼	11½	9¼	11½	9¼
Center to Center Branches...	"	5¾	4½	5¾	4½	5¾	4½
Price .....	each	3.20	3.20	3.70	3.70	4.90	4.90

The "Eureka" Combination Circulation Fitting is designed to take the place of the usual ells, tees, and nipples commonly employed in taking branches from the main flow pipe of a single hot water pipe system. A reference to the sectional view will show the construction. The hot water is taken from the top of the fitting, and, passing through the radiators, is returned through an especially devised channel in the fitting in such a manner that it flows to the cool strata in the lower side of the pipe.

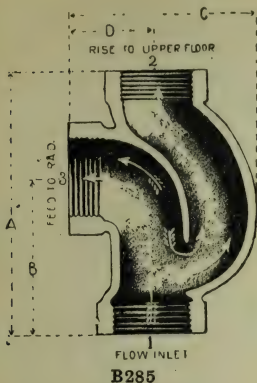
**PHELPS IDEAL SINGLE MAIN CIRCULATING HOT WATER FITTING**



B284

All Fittings are tapped one and one fourth inch flow and return. Where smaller connection is desired, use nipple and reducing elbow, or use bushing. Factory will tap fittings for one and one half inch flow and return for 10 cents additional to above list for each Fitting so tapped.

Size of Run .....	inches	2	2½	3	3½	4	4½	5
Price .....	each	1.25	1.25	1.50	2.00	2.50	3.00	3.50



## THE O. S. DISTRIBUTING FITTING

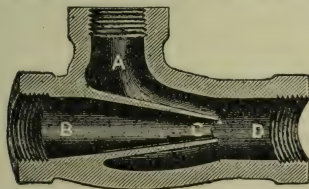
The (No. 1) bottom opening is always the largest, and governs prices of fitting. The openings read in order shown, No. 1, No. 2, and No. 3.

Size.....inches	1	1¼	1½	2	2½
Price.....each	.60	.80	.90	1.20	2.00

### LIST OF SIZES

1	2	3	1	2	3	1	2	3	1	2	3
1 x ¾ x ¾			1¼ x 1¼ x 1			1½ x 1¼ x 1½			2 x 1½ x 1½		
1 x ¾ x 1			1¼ x 1¼ x 1¼			1½ x 1½ x 1¼			2 x 2 x 1¼		
1 x 1 x ¾			1½ x 1¼ x 1			1½ x 1½ x 1½			2 x 2 x 1½		
1 x 1 x 1			1½ x 1 x 1¼			2 x 1¼ x 1½			2 x 2 x 2		
1¼ x 1 x 1			1½ x 1¼ x 1¼			2 x 1½ x 1¼			2½ x 1½ x 1½		
1¼ x 1 x 1¼									2½ x 2 x 1½		
									2½ x 2 x 2		

### McDANIEL'S PATENT SUCTION TEE



B286

A—Is inlet from coils.

B—Is main waste, working the suction.

C—End of suction pipe.

D—Outlet or return to waste.

Size.....inches	¾	1	1¼	1½	2	2½	3
Black Iron.....each	.80	1.00	1.25	1.50	2.00	2.50	3.00

### EXTRA HEAVY TEES, AT SPECIAL PRICE

The suction tee can be used in all cases where a common tee is put on a waste or return pipe. The advantage of them can be seen at once. When put on a pipe draining radiators, by having a suction tee to each radiator, one can not back up the condensation on another, as by their use the strongest one can be used to drain the weaker, instead of backing up on it and causing it to snap and crack. In connecting returns to a steam trap, connect all through suction tees or fittings and they can not back up. Where two dry-rooms connect on the same waste, the stronger will drain the weaker, and where coils are on each side of a room one side can be made to drain the other.

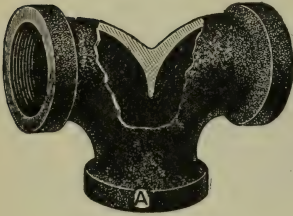


TWIN ELLS

For use instead of Branch Headers on Heating Boilers.

(See also Double Branch Ells, B244.)

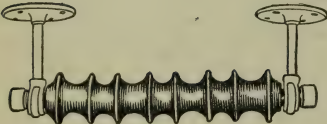
Always read the large bottom opening (A) first.



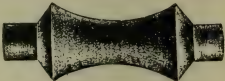
B287

Size, 1	x 3/4	in. Branches, each	\$0.38
"	1 1/4 x 1	" " "	.52
"	1 1/2 x 1 1/4	" " "	.68
"	2 x 1 1/2	" " "	.90
"	2 1/2 x 2	" " "	1.50
"	3 x 2 1/2	" " "	2.25
"	3 1/2 x 3 or 2 1/2	" " "	3.00
"	4 x 3 or 2 1/2	" " "	3.75
"	5 x 3 1/2 or 3	" " "	6.75
"	5 x 4	" " "	6.75
"	6 x 5	" " "	9.75

HANGER ROLLS  
CAST IRON



B288



B289

Size.....in.	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	10	12	14
Rolls only.ea.	.06	.07	.08	.12	.12	.12	.21	.21	.24	.24	.27	.36	.44	.72	1.05	1.32

STEEL BAND PIPE HANGERS  
FOR STEAM AND SOIL PIPES

Size .....inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Black.....each	.16	.18	.20	.22	.24	.26	.28
Galvanized..... "	.24	.27	.30	.33	.36	.40	.42
Size .....inches	3 1/2	4	4 1/2	5	6	7	8
Black .....each	.32	.34	.36	.38	.42	.65	.90
Galvanized..... "	.48	.50	.54	.56	.63	.95	1.35



B290

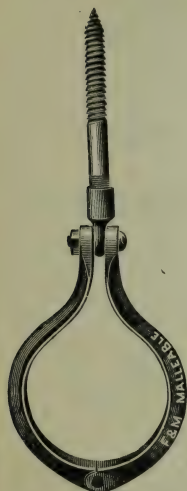
STEEL EXTENSION BAR, B291



Size and Gauge....	7/8 in. 14 Ga.	1 in. 12 Ga.	1 1/4 in. 10 Ga.
Black.....per foot	.08	.09	.10
For Hangers...size, ins.	1/2 to 2	2 1/2 to 4	5 to 8

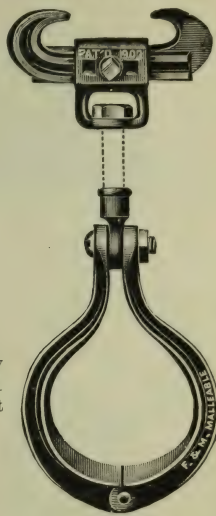
## SECTIONAL EXPANSION PIPE HANGERS

MALLEABLE  
X L  
HANGERS



B292

B292 can be furnished, less Screw  
is B292½; or (if for use with B291  
Exten. Bar) less Screw and Socket  
is B292½.



B293

Size.....	¾-1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	10
*Screw...in.	⅛	¼	¼	¼	¼	⅜	⅜	⅜	⅜	½	½	½	½	½
B292....	.18	.20	.22	.25	.30	.35	.50	.60	.65	.70	.90	1.20	1.40	1.80
B293....	.58	.60	.62	.65	.70	.75	.90	1.00	1.05	1.10	1.30	1.60	1.80	2.00
B292½..	.12	.14	.16	.18	.22	.28	.43	.53	.58	.63	.82	1.12	1.32	1.72
B292½..	.10	.12	.14	.16	.20	.25	.40	.50	.55	.60	.80	1.10	1.30	...

\*Thread on lower end of lag screw is a pipe thread, so that hanger can be lengthened with piece of pipe and a coupling.

PRICE LIST HANNA "B. J." HANGER, WITH LAG SCREW  
B294

Size....inches	¾-1	1¼	1½	2	2½	3	3½	4	5	6	7	8	10	12
Screw....inch	⅛	⅛	⅛	¼	¼	⅜	⅜	⅜	½	½	½	¾	¾	¾
Each.....	.18	.20	.22	.25	.30	.35	.37	.45	.58	.70	1.05	1.20	1.60	1.90



B296

ADJUSTABLE MALLEABLE  
BEAM CLAMP

No. 1 for 3 in. and Smaller Pipe...ea.	.40
No. 2 for 3½ in. and Larger Pipe.. "	.60

Hole in No. 1 for ⅛ or ¼ inch pipe, in No. 2 for ⅜ or ½ inch pipe.

Adjustable to Beam Flanges 3 inches to 7 inches wide.

"ABC" Beam Clamps quoted on application.

EXPANSION RING PIPE HANGERS

COMMON



B297

WESTERN

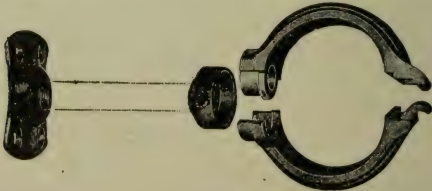


B298

Size.....inches	$\frac{1}{2}$ - $\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	6	7	8
Price.....each	.17	.18	.19	.25	.29	.36	.44	.55	.63	.90	1.12	1.35	1.80	2.25
Threaded for pipe....	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$

Price includes ring, button and plate.

CRANE EXPANSION PIPE HANGER



B299

Size.....inches	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	5	6
Set.....each	.32	.33	.35	.45	.55	.65	.80	1.00	1.15	2.00	2.50
Size of Pipe, Rings and Buttons are Tapped for..... inches	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$

**GALVANIZED RING PLATES**

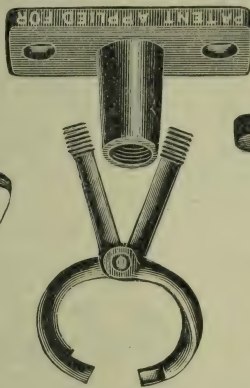
**GALVANIZED SOLID RING**

**EXTENSION SPLIT RING**

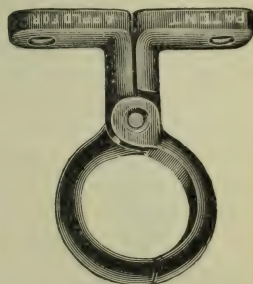
**SPLIT RING**



**B300**



**B301 1/2**



**B301**

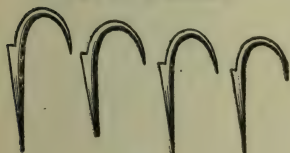
**PRICE PER 100**

Size.....inches	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Solid Rings, B300.....	6.50	6.50	7.00	9.00	12.00	16.00	25.00
Split Rings, B301.....	17.00	17.00	20.00	25.00	30.00	40.00	50.00
Exten. Split Rings, B301 1/2	25.00	25.00	30.00	35.00	40.00	50.00	60.00

Above hangers can be furnished black on special orders from factory. B301 1/2 can be adjusted from 2 3/4 inch. to 4 inch. back to centre, and by inserting a nipple and coupling the shank can be extended to any length.

**Brass Hangers** can also be furnished. Prices on application.

**GAS PIPE HOOKS**



**B303**

**TINNED STRAPS**



**B302**

**GAS PIPE HOOKS**

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Price.....per 100	.45	.55	.65	.80	1.00	1.30	1.60	2.00

**TINNED STRAPS**

Sizes, 1/4 inch to 2 inch. ....per pound \$0.20



STEEL HOOK PLATE



B304

No. of Hooks.....	1	2	3	4	5	6	7	8	9	10	11	12
3/4-in. Pipe....each	.08	.16	.21	.24	.28	.34	.40	.45	.50	.56	.68	.72
1 " " " " "	.09	.18	.23	.26	.32	.38	.48	.59	.65	.70	.85	1.00
1 1/4 " " " " "	.10	.21	.27	.32	.41	.52	.68	.80	.90	1.20	1.35	1.40
1 1/2 " " " " "	.15	.28	.43	.58	.72	.88	1.10	1.25	1.40	1.55	1.65	1.90

Steel Hook Plates can be readily converted to Expansion Plates by straightening the hooks. Center to center of Hooks: 3/4-in. is 2-in., 1 1/2-in. is 2 1/2-in., 1 1/4-in. is 3-in., 1 1/2-in. is 3 1/2-in., 2-in. is 4 1/4-in.

CAST-IRON HOOK PLATES



B305



B306

No. of Hooks ....	1	2	3	4	5	6	7	8	9	10	11	12
3/4-in. Pipe.each	.08	.16	.21	.24	.28	.34	.40	.45	.50	.56	.68	.72
1 " " " " "	.09	.18	.23	.26	.32	.38	.48	.59	.65	.70	.85	1.00
1 1/4 " " " " "	.10	.21	.27	.32	.41	.52	.68	.80	.90	1.20	1.35	1.40
1 1/2 " " " " "	.15	.28	.43	.58	.72	.88	1.10	1.25	1.40	1.55	1.65	1.90
2 " " " " "	.22	.43	.65	.90	1.15	1.35	1.75	2.00	2.25	2.50	2.75	3.00

For Center to Center measure see note under Steel Hook Plate, above.

Expansion Hook Plate



B307

Beam  
Hook



B308

CAST-IRON EXPANSION PLATES

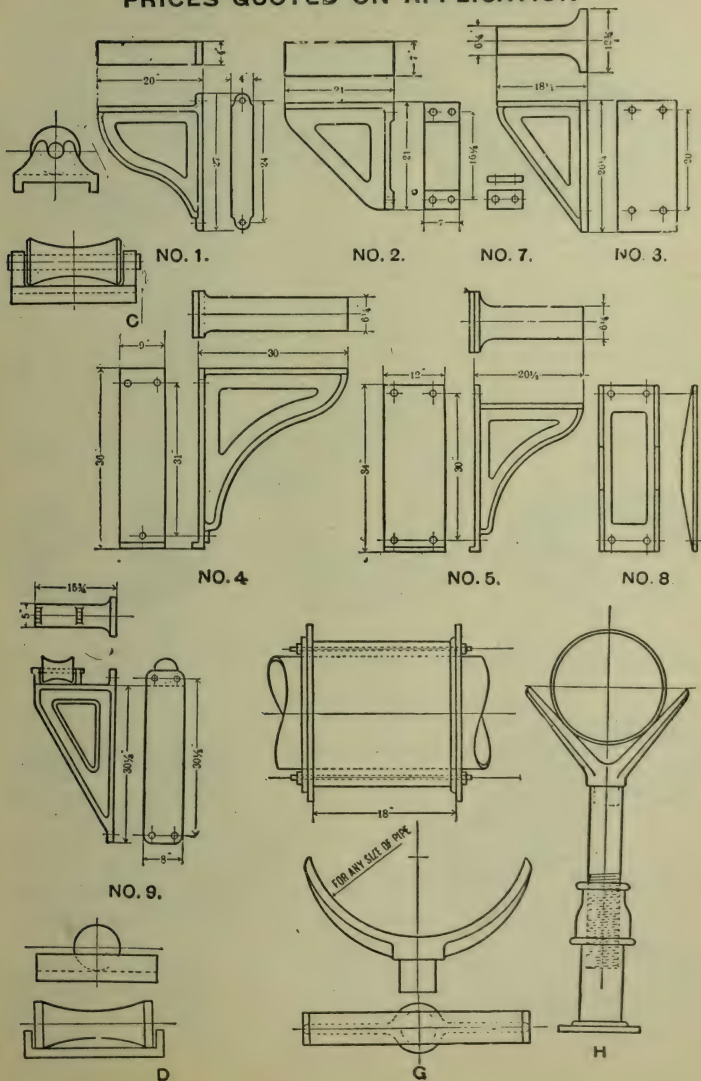
No. of Hooks....	1	2	3	4	5	6	7	8	9	10	11	12
3/4-in. Pipe, each	.12	.23	.34	.45	.55	.60	.77	.90	1.05	1.25	1.45	1.65
1 " " " " "	.15	.25	.35	.50	.60	.70	.80	.95	1.10	1.35	1.55	1.70
1 1/4 " " " " "	.17	.27	.40	.60	.70	.80	.90	1.15	1.30	1.50	1.70	2.00
1 1/2 " " " " "	.25	.40	.60	.75	.90	1.00	1.25	1.50	1.75	2.00	2.25	2.50
2 " " " " "	.40	.60	.85	1.00	1.35	1.55	2.00	2.45	2.75	3.10	3.60	4.25

For Center to Center measure see note under Steel Hook Plate, above.

BEAM HOOKS, LONG SHANK B308

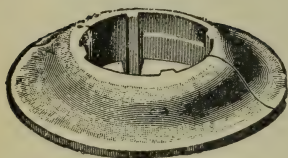
Size..... inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price.....each	.13	.15	.18	.22	.24	.35	.65	.90

**SPECIAL CAST PIPE SUPPORTS, ETC.**  
**PRICES QUOTED ON APPLICATION**

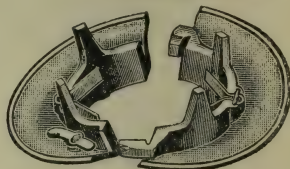


## PERFECTION ADJUSTABLE FLOOR AND CEILING PLATES

TOP VIEW



BOTTOM VIEW



B310

### PRICE EACH

Size .....inch	$\frac{1}{2}$ - $\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	8
Nickel-plated.	.25	.28	.32	.35	.38	.52	.75	1.10	1.50	1.75	2.00	2.50	3.00
Black.....	.14	.18	.20	.24	.28	.43	.60	.90	1.25	1.40	1.60	2.00	2.50

## B AND C ADJUSTABLE FLOOR AND CEILING PLATES

FLOOR

Nickel-Plated and Black



B311

CEILING



B312

Use above list prices.

## GRABLER SURE LOCK FLOOR AND CEILING PLATES

TOP VIEW

Nickel-Plated

BOTTOM VIEW



Use above list Nickel-Plated



B313

## RUSSELL ADJUSTABLE FLOOR AND CEILING PLATES

TOP VIEW

Nickel-Plated

BOTTOM VIEW

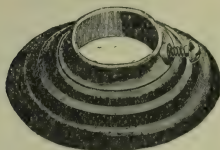


Use above list Nickel-Plated.



B314

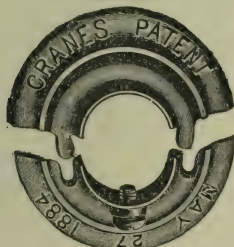
ONE-PIECE  
IRON CEILING PLATES  
BLACK



B315

Inch.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Each.....	.11	.13	.16	.18	.23	.27	.36	.50	.55	.68	.95	1.25

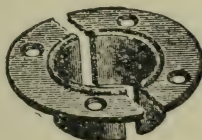
CRANE'S  
PATENT CEILING PLATES  
BLACK



B316

Inch.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Each.....	.22	.28	.32	.40	.50	.65	.90	1.00	1.20	2.00	2.50

CRANE'S FLOOR PLATES  
BLACK

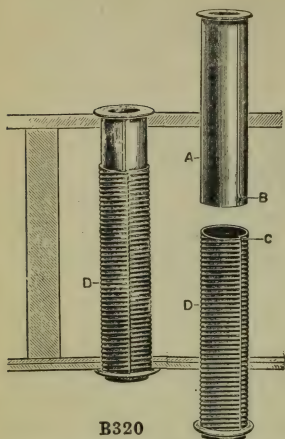


B317

Inch.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8
Each.....	.06	.06	.08	.11	.14	.16	.24	.30	.35	.42	.60	.75	1.75

This Floor Plate is made with grooves on the under side of the flange, as shown in cut, in order that it may be easily parted by a slight blow when required to be used in halves.





## THE ACME FLOOR SLEEVE

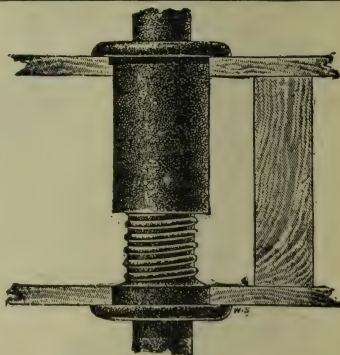
For Steam and Water Pipes  
Made of Galvanized Iron

"B" slides in slot "C" to proper adjustment, and sleeve is tightened and locked in position by a half turn to the right.

ADJUSTABLE FROM 10  
TO 18 INCHES

Size of Pipe.....inches	1	1¼	1½	2	2½	3	3½	4	5	6
Price.....Each	1.20	1.35	1.50	1.80	2.10	2.50	3.00	3.75	4.50	5.25

## VOSBURG ADJUSTABLE CAST-IRON FLOOR THIMBLES



B321

Size....inches	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
No. 1, Black...	.50	.60	.80	1.00	1.20	1.40	1.65	2.00	2.75	4.25	4.75	6.00
No. 1, N. P....	.90	1.00	1.30	1.60	1.90	2.20	2.75	3.20	4.15	5.75	6.35	7.80
No. 2, Black...	.60	.70	.90	1.10	1.30	1.55	1.80	2.15	3.00	4.50	5.00	6.50
No. 2, N. P....	1.00	1.10	1.40	1.70	2.00	2.35	2.90	3.35	4.40	6.00	6.60	8.30

No. 1, minimum length, 9 inches; maximum length, 16 inches.

No. 2, minimum length, 15 inches; maximum length, 22 inches.

No. 1 will always be shipped unless otherwise ordered.

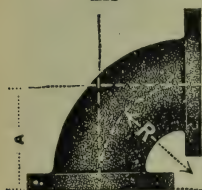
Nickel plated thimbles have only the exposed parts or flange nickel plated.

# LONG TURN FLANGED CAST-IRON FITTINGS FOR 150 POUNDS WORKING PRESSURE

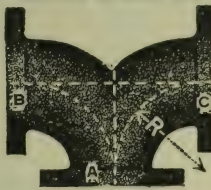
Ell

Double Branch Ell

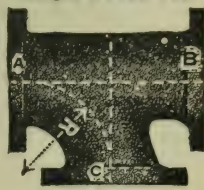
Single Sweep Tee



B325



B326

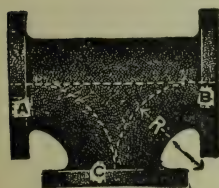


B327

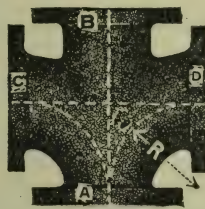
Straight Back Tee

Cross

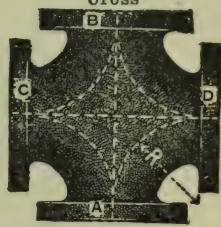
Cross



B328



B329



B330

\*If fitting is required to be any certain dimension, face to face or center to face, please so state when inquiring or ordering.

Diameter of Flanges and Template for Drilling, same as Companion Flanges, B345.

These fittings are reduced by use of reducing companion flanges. See B348.

Read reducing fittings in order indicated by A, B, C, D.

	2	2½	3	3½	4	4½	5	6
Ell { Faced .....	5.25	5.50	6.50	7.50	8.00	10.00	11.00	13.25
	6.25	6.75	7.75	8.75	10.00	12.00	13.00	15.50
Double Br. Ells { Faced ..	8.00	8.25	9.50	11.00	12.00	15.00	16.25	20.00
Single S Tees { F. & D. .	9.50	10.00	11.25	12.75	15.00	18.00	19.25	23.00
Double S Tees { Faced .....	11.00	12.50	15.00	17.50	20.00	24.00	27.00	35.00
Cross { Faced and drilled.	13.00	15.00	17.50	20.00	24.00	28.00	31.00	39.00

## \*Regular Dimensions

Measurement A....inches  
" B..... "

	7	8	9	10	12	14	16	.....
Ell { Faced .....	17.50	22.00	29.00	36.00	49.00	64.00	94.00	.....
	21.00	26.00	33.00	40.00	55.00	71.00	103.00	.....
Double Ells { Faced ...	26.50	33.50	43.50	53.50	74.00	96.00	140.00	.....
Single S Tees { F. & D. .	32.00	39.00	50.00	60.00	83.00	107.00	153.00	.....
Double S Tees { Faced .....	45.00	56.00	70.00	84.00	115.00	150.00	220.00	.....
Cross { Faced and drilled.	52.00	64.00	78.00	92.00	127.00	164.00	237.00	.....

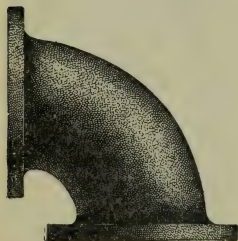
## \*Regular Dimensions

Measurement A....inches  
" B..... "

	9¾	11½	12½	13½	15	16½	18½	.....
	6¼	7½	8¼	8¾	9¾	10¾	13½	.....

## STANDARD FLANGED CAST-IRON FITTINGS

Intended for working pressure up to 125 pounds per square inch, (the Pittsburg make is rated up to 200 pounds pressure). Other conditions such as weight of piping which they are to support, strain due to settling, water, hammer, etc., must be taken into consideration when determining the limit of safety for fittings.

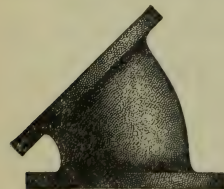


B331

### STANDARD ELBOW—Flanged

For Dimensions see B355 and 356. Diam. Flanges and drilling Template, see B345.

Pipe Size ....inches	2	2½	3	3½	4	4½	5	6	7	8
Flanges, Faced only	4.75	5.00	5.75	6.50	7.25	9.00	9.75	12.00	16.00	20.00
" " and D.	5.75	6.25	7.00	7.75	9.25	11.00	11.75	14.00	19.75	23.75
Pipe Size ....inches	9	10	12	14	15	16	18	20	22	24
Flanges, Faced only	26.00	32.00	44.00	58.00	72.00	84.00	108.00	135.00	160.00	200.00
" " and D.	30.00	36.00	50.00	65.00	80.00	93.00	118.00	148.00	180.00	220.00



B332

### STANDARD 45° ELBOW—Flanged

For Dimensions see B355 and 356. Diam. Flanges and drilling Template, see B345.

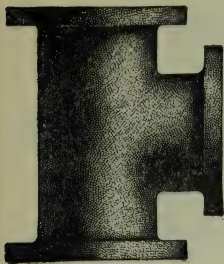
Pipe Size ....inches	2	2½	3	3½	4	4½	5	6	7	8
Flanges, Faced only	5.25	5.50	6.25	7.25	8.00	10.00	10.75	13.00	16.00	20.00
" " and D.	6.25	6.75	7.50	8.50	10.00	12.00	12.75	15.00	19.75	23.75
Pipe Size ....inches	9	10	12	14	15	16	18	20	22	24
Flanges, Faced only	26.00	32.00	44.00	58.00	72.00	84.00	108.00	135.00	160.00	200.00
" " and D.	30.00	36.00	50.00	65.00	80.00	93.00	118.00	148.00	180.00	220.00

### LOW PRESSURE FLANGED FITTINGS

Intended for 50 pounds Working Pressure

Sizes 12-inch to 36-inch—Using Standard list, quoted on application.

## STANDARD FLANGED CAST-IRON FITTINGS



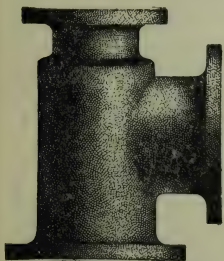
B333

For 125 Pounds Working Pressure

## STANDARD TEE — Flanged

Dimensions, B355 and 356. Diam. Flanges  
and drilling Template, B345.

Pipe size..... inches	2	2½	3	3½	4	4½	5
Flanges Faced only.....	7.00	7.25	8.25	9.50	10.50	13.00	14.25
“ “ and Drilled..	8.50	9.00	10.00	11.25	13.50	16.00	17.25
Pipe Size..... inches	6	7	8	9	10	12	14
Flanges faced only.....	17.50	23.00	29.00	38.00	46.50	64.00	84.00
“ “ and drilled..	20.50	28.75	34.75	44.00	52.50	73.00	95.00
Pipe Size..... inches	16	18	20	22	24	.....	.....
Flanges Faced only.....	122.00	155.00	195.00	230.00	290.00	.....	.....
“ “ and Drilled..	135.00	170.00	215.00	260.00	320.00	.....	.....



B334

## STANDARD REDUCING TEE

Flanged

Reducing in Run or Branch.

For Dimensions, see B355 and 356. Diam. Flanges  
and drilling Template, B345.

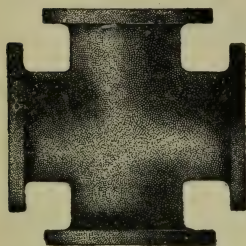
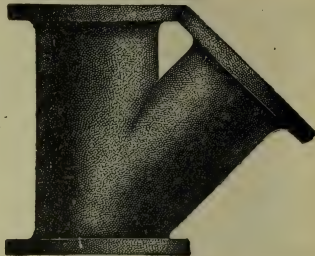
Pipe Size..... inches	2½	3	3½	4	4½	5
Flanges Faced only.....	8.25	9.50	11.00	12.00	15.00	16.25
“ “ and Drilled.....	10.00	11.25	12.75	15.00	18.00	19.25
Pipe Size..... inches	6	7	8	9	10	12
Flanges Faced only.....	20.00	26.50	33.50	43.50	53.50	74.00
“ “ and Drilled.....	23.00	32.00	39.00	50.00	60.00	83.00
Pipe Size..... inches	14	16	18	20	22	24
Flanges Faced only.....	96.00	140.00	178.00	225.00	265.00	335.00
“ “ and Drilled.....	107.00	153.00	193.00	245.00	295.00	365.00

Low Pressure Fittings for 50 pounds pressure, 12-inch to 36-inch, quoted on application.



**STANDARD FLANGED CAST-IRON FITTINGS**

For 125 Pounds Working Pressure

**FLANGED CROSS****B335****FLANGED LATERAL****B336**

For Dimensions, see B355 and 356. Diam. Flanges and drilling Template, B345.

**CROSS AND LATERAL**

Pipe Size....inches	2	2½	3	3½	4	4½	5	6
Flanges Faced only... each	9.50	10.00	11.50	13.00	14.50	18.00	19.50	24.00
" " and D... "	11.50	12.50	14.00	15.50	18.50	22.00	23.50	28.00
Pipe Size ....inches	7	8	9	10	12	14	16	.....
Flanges Faced only... each	32.00	40.00	52.00	64.00	88.00	116.00	168.00	.....
" " and D. "	39.50	47.50	60.00	72.00	100.00	130.00	186.00	.....

**STANDARD REDUCING CROSS AND LATERAL**

Pipe Size ....inches	2	2½	3	3½	4	4½	5	6
Flanges Faced only... each	.....	11.50	13.25	15.00	16.75	20.75	22.50	27.50
" " and D... "	.....	14.00	15.75	17.50	20.75	25.00	26.50	31.50
Pipe Size....inches	7	8	9	10	12	14	16	.....
Flanges Faced only... each	37.00	46.00	60.00	74.00	100.00	132.00	193.00	.....
" " and D... "	45.00	53.50	68.00	82.00	112.00	146.00	210.00	.....

**BASE ELBOW AND TEE****B337 and B338**

MADE TO ORDER.

PRICE LIST BELOW.

Pipe Size.....inches	4	4½	5	6	7
Ell Faced only .....	12.00	15.00	16.25	20.00	26.50
" " and Drilled .....	15.00	18.00	19.25	23.00	32.00
Pipe Size.....inches	8	10	12	14	16
Ell Faced only .....	33.50	53.50	74.00	96.00	140.00
" " and Drilled .....	39.00	60.00	83.00	170.00	153.00

Tee quoted on application. Low Pressure Fittings for 50 pounds pressure, 2-inch to 36-inch, quoted on application.

# STANDARD FLANGED CAST-IRON FITTINGS

For 125 Pounds Working Pressure  
Special Pattern



B340

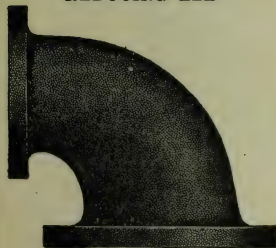
## FLANGED SPECIAL LONG RADIUS ELL

See Template for drilling, B345.  
Diameter of Flanges, same as B345.

Pipe Size .....Inches	4	5	6	7	8	10	12	14	16
Flanges faced only	14.50	19.50	24.00	32.00	40.00	64.00	110.00	160.00	200.00
“ “ and drilled	18.50	23.50	28.00	39.50	47.50	72.00	120.00	175.00	220.00
Radius { Crane Fitting In.	12	14	14	16	14½	17	22½	32	32
Center to face {	13¾	14½	14½	17½	15½	18	24	33	33

Also made to order of different dimensions at special price.

## FLANGED TAPER REDUCING ELL



B341

## FLANGED TAPER REDUCER



B342

Prices on application.

See Template for drilling, B345. Diameter of Flanges, same as B345.

Pipe Size.....Inches	3½	4	5	6	7
Elbow { Flanges, faced only	13.00	14.50	19.50	24.00	32.00
“ “ and drilled	15.50	18.50	23.50	28.00	39.50
Center to Face, Crane Fitting, Inches	6	6½	7½	8	8½
Reduced to.....Inches	3-2½	3-2½-2	4-3-2½	5-4-3	6-5
Pipe Size.....Inches	8	10	12	14	16
Elbow { Flanges, faced only	40.00	64.00	88.00	116.00	168.00
“ “ and drilled	47.50	72.00	100.00	130.00	186.00
Center to Face, Crane Fitting, Inches	9	11	12	14	15
Reduced to.....Inches	6-5-4	8-6-5	10-8	12-10	15-12

Other sizes quoted on application.

Low Pressure Fittings for 50 pounds pressure, 12 inch to 36-inch, quoted on application.

## STANDARD COMPANION FLANGES



B345

For Standard Valves and Fittings

For 150 lbs. Working Pressure.

**BLIND FLANGES**  
16 in. and Less  
Diameter



B346

**BLIND FLANGES**  
19 in. and Larger  
Diameter



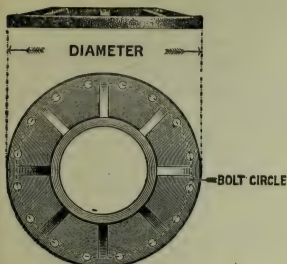
B347

Size Inches	FACED FLANGES		FACED BLIND FLANGES		DRILLING		
	Faced Price Each	Faced and Drilled Price Each	Faced Price Each	Faced and Drilled Price Each	Bolt Circle Inches	No. Bolts	Size Bolts
2 x 6	1.20	1.50	1.40	1.70	4 <sup>3</sup> / <sub>4</sub>	4	5 <sup>8</sup> / <sub>8</sub> x 2
2 <sup>1</sup> / <sub>2</sub> x 7	1.40	2.00	1.60	2.20	5 <sup>1</sup> / <sub>2</sub>	4	5 <sup>8</sup> / <sub>8</sub> x 2 <sup>1</sup> / <sub>4</sub>
3 x 7 <sup>1</sup> / <sub>2</sub>	1.60	2.25	1.85	2.50	6	4	5 <sup>8</sup> / <sub>8</sub> x 2 <sup>1</sup> / <sub>2</sub>
3 <sup>1</sup> / <sub>2</sub> x 8 <sup>1</sup> / <sub>2</sub>	1.80	2.50	2.10	2.80	7	4	5 <sup>8</sup> / <sub>8</sub> x 2 <sup>1</sup> / <sub>2</sub>
4 x 9	2.15	3.00	2.50	3.35	7 <sup>1</sup> / <sub>2</sub>	4	3 <sup>4</sup> / <sub>4</sub> x 2 <sup>3</sup> / <sub>4</sub>
4 <sup>1</sup> / <sub>2</sub> x 9 <sup>1</sup> / <sub>4</sub>	2.50	3.35	2.90	3.75	7 <sup>3</sup> / <sub>4</sub>	8	3 <sup>4</sup> / <sub>4</sub> x 3
5 x 10	2.80	3.65	3.25	4.10	8 <sup>1</sup> / <sub>2</sub>	8	3 <sup>4</sup> / <sub>4</sub> x 3
6 x 11	3.20	4.00	3.70	4.50	9 <sup>1</sup> / <sub>2</sub>	8	3 <sup>4</sup> / <sub>4</sub> x 3
7 x 12 <sup>1</sup> / <sub>2</sub>	4.35	5.75	5.00	6.40	10 <sup>3</sup> / <sub>4</sub>	8	3 <sup>4</sup> / <sub>4</sub> x 3 <sup>1</sup> / <sub>4</sub>
8 x 13 <sup>1</sup> / <sub>2</sub>	5.00	6.50	5.75	7.25	11 <sup>3</sup> / <sub>4</sub>	8	3 <sup>4</sup> / <sub>4</sub> x 3 <sup>1</sup> / <sub>2</sub>
9 x 15	6.75	8.25	7.75	9.25	13 <sup>1</sup> / <sub>4</sub>	12	3 <sup>4</sup> / <sub>4</sub> x 3 <sup>1</sup> / <sub>2</sub>
10 x 16	7.75	9.25	9.00	10.60	14 <sup>1</sup> / <sub>4</sub>	12	7 <sup>8</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>4</sub>
12 x 19	10.50	12.50	14.00	16.00	17	12	7 <sup>8</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>4</sub>
14 x 21	13.75	16.00	17.50	19.75	18 <sup>3</sup> / <sub>4</sub>	12	1 x 4 <sup>1</sup> / <sub>4</sub>
15 x 21	18.00	21.00	22.50	25.50	....	..	....
15 x 22 <sup>1</sup> / <sub>4</sub>	18.00	21.00	22.50	25.50	20	16	1 x 4 <sup>1</sup> / <sub>4</sub>
16 x 23 <sup>1</sup> / <sub>2</sub>	22.50	26.00	28.00	31.50	21 <sup>1</sup> / <sub>4</sub>	16	1 x 4 <sup>1</sup> / <sub>4</sub>
18 x 25	27.50	31.00	33.00	36.50	22 <sup>3</sup> / <sub>4</sub>	16	1 <sup>1</sup> / <sub>8</sub> x 4 <sup>3</sup> / <sub>4</sub>
20 x 27 <sup>1</sup> / <sub>2</sub>	30.00	34.00	36.00	40.00	25	20	1 <sup>1</sup> / <sub>8</sub> x 5
22 x 29 <sup>1</sup> / <sub>2</sub>	....	....	41.00	46.00	27 <sup>1</sup> / <sub>4</sub>	20	1 <sup>1</sup> / <sub>4</sub> x 5 <sup>1</sup> / <sub>2</sub>
24 x 32	....	....	50.00	55.00	29 <sup>1</sup> / <sub>2</sub>	20	1 <sup>1</sup> / <sub>4</sub> x 5 <sup>1</sup> / <sub>2</sub>
26 x 34 <sup>1</sup> / <sub>4</sub>	....	....	....	....	31 <sup>3</sup> / <sub>4</sub>	24	1 <sup>1</sup> / <sub>4</sub> x 5 <sup>3</sup> / <sub>4</sub>
28 x 36 <sup>1</sup> / <sub>2</sub>	....	....	....	....	34	28	1 <sup>1</sup> / <sub>4</sub> x 6
30 x 38 <sup>3</sup> / <sub>4</sub>	....	....	....	....	36	28	1 <sup>3</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>4</sub>
36 x 45 <sup>3</sup> / <sub>4</sub>	....	....	....	....	42 <sup>3</sup> / <sub>4</sub>	32	1 <sup>3</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>2</sub>

NOTE—Flanges and Flanged Fittings are drilled in multiples of four, so that fittings may be made to face in any quarter, and holes straddle center line. Can be drilled special.

Low Pressure Flanges for 50 pounds pressure, special.





B348

## STANDARD REDUCING COMPANION FLANGES

WITH RIBS. THE STANDARD VALVES AND  
FLANGED FITTINGS FOR 150 POUNDS  
WORKING PRESSURE

Drilling Template is same as for corresponding  
flange diameters, B345.

PRICE			PRICE			PRICE		
Size Inches	Faced Each	Faced and Drilled Each	Size Inches	Faced Each	Faced and Drilled Each	Size Inches	Faced Each	Faced and Drilled Each
2 x 7	2.10	3.00	5 x 12 $\frac{1}{2}$	6.50	8.50	14 x 22 $\frac{1}{4}$	27.00	31.50
2 x 7 $\frac{1}{2}$	2.40	3.35	6 x 12 $\frac{1}{2}$	6.50	8.50	10 x 23 $\frac{1}{2}$	34.00	39.00
2 $\frac{1}{2}$ x 7 $\frac{1}{2}$	2.40	3.35	5 x 13 $\frac{1}{2}$	7.50	9.75	12 x 23 $\frac{1}{2}$	34.00	39.00
2 x 8 $\frac{1}{2}$	2.70	3.75	6 x 13 $\frac{1}{2}$	7.50	9.75	14 x 23 $\frac{1}{2}$	34.00	39.00
2 $\frac{1}{2}$ x 8 $\frac{1}{2}$	2.70	3.75	7 x 13 $\frac{1}{2}$	7.50	9.75	15 x 23 $\frac{1}{2}$	34.00	39.00
3 x 8 $\frac{1}{2}$	2.70	3.75	6 x 15	10.00	12.25	12 x 25	41.00	46.00
2 $\frac{1}{2}$ x 9	3.25	4.50	7 x 15	10.00	12.25	14 x 25	41.00	46.00
3 x 9	3.25	4.50	8 x 15	10.00	12.25	15 x 25	41.00	46.00
3 $\frac{1}{2}$ x 9	3.25	4.50	7 x 16	11.50	14.00	16 x 25	41.00	46.00
3 x 9 $\frac{1}{4}$	3.75	5.00	8 x 16	11.50	14.00	14 x 27 $\frac{1}{2}$	45.00	51.00
3 $\frac{1}{2}$ x 9 $\frac{1}{4}$	3.75	5.00	9 x 16	11.50	14.00	15 x 27 $\frac{1}{2}$	45.00	51.00
4 x 9 $\frac{1}{4}$	3.75	5.00	8 x 19	15.75	18.75	16 x 27 $\frac{1}{2}$	45.00	51.00
3 $\frac{1}{2}$ x 10	4.25	5.50	9 x 19	15.75	18.75	18 x 27 $\frac{1}{2}$	45.00	51.00
4 x 10	4.25	5.50	10 x 19	15.75	18.75	16 x 29 $\frac{1}{2}$	50.00	58.50
4 $\frac{1}{2}$ x 10	4.25	5.50	9 x 21	20.00	24.00	18 x 29 $\frac{1}{2}$	50.00	58.50
4 x 11	4.75	6.00	10 x 21	20.00	24.00	20 x 29 $\frac{1}{2}$	50.00	58.50
4 $\frac{1}{2}$ x 11	4.75	6.00	12 x 21	20.00	24.00	18 x 32	61.00	70.00
5 x 11	4.75	6.00	10 x 22 $\frac{1}{4}$	27.00	31.50	20 x 32	61.00	70.00
4 $\frac{1}{2}$ x 12 $\frac{1}{2}$	6.50	8.50	12 x 22 $\frac{1}{4}$	27.00	31.50	.....	.....	.....

## REDUCING FLANGED FITTINGS

It is not possible to carry in stock a line of Reducing Flanged Fittings sufficiently large to meet all demands promptly. We aim to carry a complete line of straight sizes and a moderate line of Reducing Tees, but we do not attempt to cover all possible sizes.

To avoid delay, we carry in stock a line of Reducing Flanges as illustrated above. These flanges, used in connection with straight or reducing fittings carried in stock, enable us to fill orders for reduced sizes very promptly.

**Customers Who Desire Fittings Reduced in this Manner Will Please Specify "Reduced by Flanges if Necessary."**

Reducing flanges are made as per table above.

These flanges will always be the same thickness as the regular companion flanges of corresponding outside diameter and are always drilled to the template corresponding to the outside diameter unless otherwise ordered, except on special order.



## PRICES FOR DRILLING FLANGED VALVES

STANDARD AND LOW  
PRESSURE VALVES

B349

EXTRA HEAVY AND  
MEDIUM VALVES

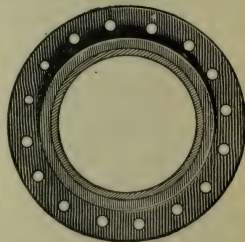
Size Inches	Price Drilling Valves With 2 Flanges Except Angle Valves Each	Price Drilling Angle Vavles Each	Price Drilling Cross Valves And Cross Safety Valves Each	Price Drilling Valves With 2 Flanges Except Angle Valves Each	Price Drilling Angle Valves Each	Price Drilling Cross Valves Each
2	.75	1.25	1.50	.75	1.25	1.50
2½	.75	1.25	1.50	.75	1.25	1.50
3	.75	1.25	1.50	.75	1.25	1.50
3½	1.00	1.50	2.00	1.00	1.50	2.00
4	1.25	1.75	2.50	1.25	1.75	2.50
4½	1.50	2.00	3.00	1.50	2.00	3.00
5	1.50	2.00	3.00	1.50	2.00	3.00
6	1.75	2.50	3.50	1.75	2.50	3.50
7	2.25	3.00	4.50	2.25	3.00	4.50
8	2.25	3.00	4.50	2.25	3.00	4.50
9	2.50	3.50	5.00	2.50	3.50	5.00
10	2.50	3.50	5.00	2.50	3.50	5.00
12	3.50	5.00	7.00	3.50	5.00	7.00
14	4.00	6.00	....	4.00	6.00	8.00
15	4.50	6.50	....	4.00	6.00	8.00
16	5.00	7.00	....	5.00	7.00	....
18	6.00	....	....	6.00	....	....
20	7.50	....	....	7.50	....	....
22	9.00	....	....	9.00	....	....
24	10.00	....	....	10.00	....	....
30	12.00	....	....	12.00	....	....



B350

These cuts illustrate a method we sometimes employ for flanging pipe of 12 inches diameter and larger. The flanges are not threaded, but are bored to fit the pipe with the inside corner of the flange face chamfered off. The end of the pipe is then inserted in the flange and expanded, with the end peened down into the recess in flange. No rivets are used.

Prices on application.



B351

We Cut and Thread Pipe to any dimensions.



B352

**FLANGES**  
Tapped Eccentric

Prices on application.

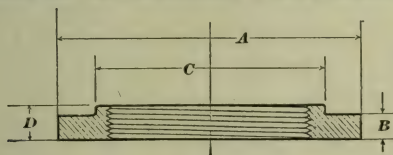
# THE FOLLOWING IS A LIST OF ORDINARY SIZES OF REDUCING FLANGED TEES

Can generally be had promptly. Other sizes furnished on short notice.

By using Reducing Companion Flanges, straight sizes of tees can be used, and the desired reduction secured in the flange. When ordering reduced flanged tees, please state whether it will be satisfactory to furnish nearest size in stock, and reducing flanges, to make the size desired.

3 x 3 x 2½	6 x 5 x 3	12 x 12 x 10
4 x 4 x 3	7 x 7 x 6	12 x 12 x 8
4 x 4 x 2½	7 x 7 x 5	12 x 12 x 7
4 x 4 x 2	7 x 7 x 4	12 x 12 x 6
4 x 3 x 4	7 x 6 x 5	12 x 12 x 5
5 x 5 x 4	8 x 8 x 6	12 x 10 x 12
5 x 5 x 3	8 x 8 x 5	12 x 8 x 12
5 x 5 x 2½	8 x 8 x 4	12 x 10 x 10
5 x 4 x 5	8 x 6 x 8	14 x 14 x 12
5 x 3 x 3	8 x 6 x 6	14 x 14 x 10
6 x 6 x 5	6 x 6 x 8	14 x 14 x 8
6 x 6 x 4	10 x 10 x 8	14 x 14 x 7
6 x 6 x 3½	10 x 10 x 6	14 x 14 x 6
6 x 6 x 3	10 x 10 x 5	14 x 10 x 10
6 x 6 x 2½	10 x 10 x 4	16 x 16 x 12
6 x 6 x 2	10 x 8 x 10	16 x 16 x 10
6 x 5 x 6	10 x 6 x 10	16 x 16 x 8
6 x 4 x 6	10 x 8 x 8	12 x 12 x 16
6 x 5 x 5	8 x 8 x 10	

## DIMENSIONS OF STANDARD COMPANION FLANGES

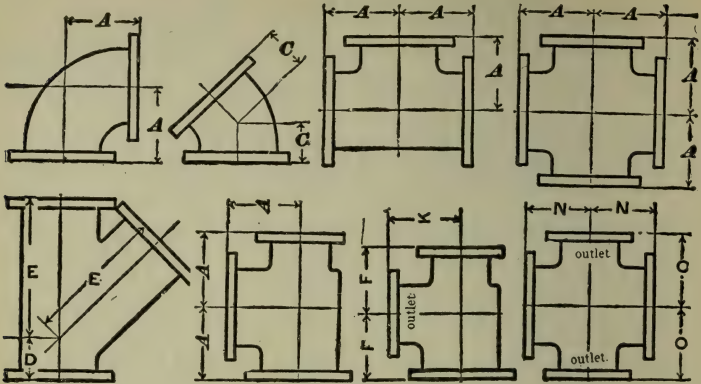


2 in. to 20 in. Screwed.

B353

Pipe Size.....inches	2	2½	3	3½	4	4½	5	6	7	8
Diameter of Flange A.....inches	6	7	7½	8½	9	9½	10	11	12½	13½
Thickness of " B....."	5/8	11/8	3/4	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8
Length of Thread D....Pittsburg Flange	1	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8
" D....Crane	1	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8
Pipe Size.....inches	9	10	12	14	15	16	18	20	22	24
Diameter of Flange A.....inches	15	16	19	21	22½	23½	25	27½	29½	32
Thickness of " B....."	1 1/8	1 3/8	1 3/4	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8
Length of Thread D....Pittsburg Flange	1 3/8	1 11/8	1 11/8	1 7/8	2 1/8	2 1/8	2 3/8	2 3/8	2 11/8	3
" D....Crane	1 3/4	1 7/8	2 1/8	2 3/8	2 3/8	2 3/8	2 3/8	2 3/4	2 7/8	3

For Standard Drilling of Flanges and Fittings, see B345.



B355

DIMENSION

PITTSBURG

STANDARD FLANGED ELLS, TEES AND CROSSES

Diameter and thickness of Flanges on fittings is same as Companion Flanges, B353.

Pipe Size of Run.....inches	2	2½	3	3½	4	4½	5	6	7	8
*Face to Face, AA or OO .....	8	9	9½	11	11½	12	12½	14	15½	16½
Center to Face, AK or O .....	4	4½	4¾	5½	5¾	6	6¼	7	7¾	8¼
Center to Face, 45° Ell-C .....	2½	2¾	3	3¼	3½	3¾	3¾	4	4½	4¾
Center to Face, Y Short End-D..	1¾	2	2¼	2½	2¾	2¾	2¾	3¼	3¾	4
Center to Face, Y Branches E..	7½	8½	9¼	10¼	11	11¼	12¼	13½	15¼	16½

Pipe Size of Run.....inches	9	10	12	14	15	16	18	20	22	24
*Face to Face, AA or OO .....	18	19½	22½	25	26	27½	29½	32	34½	37
Center to Face, AK or O .....	9	9¾	11¼	12½	13	13¾	14¾	16	17¾	18½
Center to Face, 45° Ell-C .....	5	5½	6½	7	7½	7¾	8¼	8¾	9¼	10
Center to Face, Y Short End-D	4¼	4½	5¼	5½	6	6½	6¾	7¾	8	8½
Center to Face, Y Branches-E.	18	19¼	23	25½	27	28½	30¼	33¼	35½	38¾

\*Reduction in the run of tees and crosses does not change the face to face measurement. For instance, an 8x6x8 tee would take same face to face measurement as an 8x8x8; but tees and crosses having a reduced branch are shorter face to face than straight sizes. See following rule.

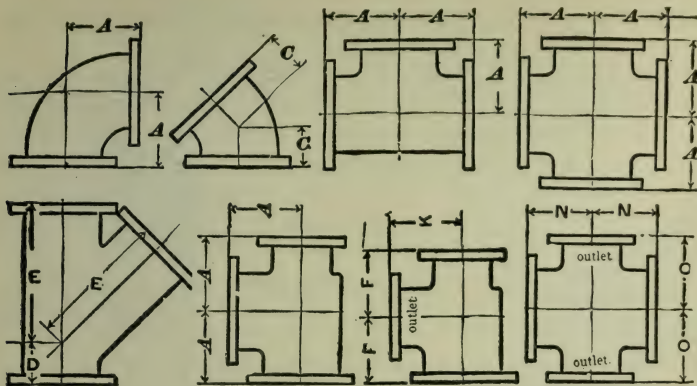
"PITTSBURG" TEES AND CROSSES

With Outlet Smaller than Largest Opening in the Run

F. F. and N. N. To get face to face measurement, subtract the diameter of the flange on the outlet from diameter of largest flange on run (see diameter Companion Flanges, B345), and subtract this difference from the face to face measurement of straight tee or cross, as shown AA; the remainder will represent the face to face measurement FF of the tee or NN of the cross with the reduced outlet.

Tees Having Outlet Larger than the Run.

Take the same measurement face to face AA and center to face A, as a straight fitting, of same size as the large branch.  
Reduced Y's are same measurements D and E as shown in table above.



B356

DIMENSIONS

CRANE'S STANDARD FLANGED FITTINGS

Reducing Tees and crosses (except those shown in Table 3) are same dimensions. Face to face of run and center to face of outlet, as straight fittings, (tables 1 and 2). Face to face dimensions of Flanged Fittings are not changed by reduction on the run. Diameter of Flanges, etc., are same as Companion Flanges, B345.

Reducing Tees and Crosses 2" to 9" inclusive are the same dimensions as straight fittings center to face and face to face.

Table No. 1 .... Size of Run, inches	2	2½	3	3½	4	4½	5	6	7	8	9
Face to Face, AA, FF, NN, or OO inch's	9	10	11	12	13	14	15	16	17	18	20
Center to Face, A, K, N, or O.. "	4½	5	5½	6	6½	7	7½	8	8½	9	10
" " 45° Ell C..... "	2½	3	3	3½	4	4	4½	5	5½	5½	6
" " Face Y, Short End-D .. "	2½	2½	3	3	3	3	3½	3½	4	4½	4½
" " " " Long Ends-E .. "	8	9½	10	11½	12	12½	13½	14½	16½	17½	19½

Table No. 2. .... Size of Run, inches	10	12	14	15	16
Outlets.....inches	7 to 10-inch	9 to 12-inch	10 to 14-inch	10 to 15-inch	12 to 16-inch
Face to Face AA, FF, or NN.....inches	22	24	28	29	30
Center to Face A, K, N, or O..... "	11	12	14	14½	15
" " 45° Ell C..... "	6½	7½	7½	8	8
" " Face, Y Short End-D .. "	5	5½	6	6	6½
" " " " Long Ends-E..... "	20½	24½	27	28½	30

Reducing Tees and Crosses *not mentioned above.*

Table No. 3..... Size of Run, inches	10	12	14	15	16
Outlets .....inches	6 and smaller	8 and smaller	9 and smaller	9 and smaller	10 and smaller
Face to Face, FF or NN.....inches	18	20	22	23	24
Center to Face, Outlet K O..... "	9½	11	13	13½	14

Tees having outlets larger than the run will be the same length center to face of all openings as a Tee with all openings of the size of the outlet.

Example: A 12" x 12" x 16" Tee will be governed by the dimensions of the 16-inch Tee, namely, 15 inches center to face of all openings, and 30 inches face to face.

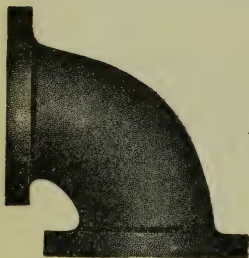
Reducing Y's being made to order, we are unable to give dimensions.



## EXTRA HEAVY FLANGED CAST-IRON FITTINGS

Intended for 250 pounds working pressure, but have been successfully used on even higher pressure, so that the margin of Safety is very wide

They can be furnished, tongued and grooved flanges, or with male and female flanges, at special prices. See B425.



B401

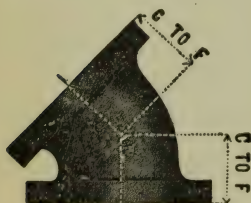
### EXTRA HEAVY FLANGED ELBOW

See Diam. Flanges and drilling Template, B416.

Dimensions, B430 and 431.

Size Pipe...inches	2	2½	3	3½	4	4½	5	6	7	8	9
Flanges, Faced only .....	7.00	7.75	8.75	9.75	10.75	13.50	15.00	18.00	24.00	30.00	39.00
Flanges, Faced and Dr'll'd	8.50	9.25	10.50	11.50	13.50	16.50	17.75	21.00	28.00	35.00	45.00

Size Pipe..inches	10	12	14	15	16	18	20	22	24
Flanges, Faced only .....	48.00	66.00	87.00	108.00	125.00	160.00	200.00	240.00	300.00
Flanges, Faced and Dr'll'd	54.00	75.00	97.00	120.00	140.00	175.00	220.00	270.00	330.00



B402

### EXTRA HEAVY 45 DEGREE ELBOW

Flanged

See Diam. Flanges and drilling Template, B 416.

Dimensions, B430 and 431.

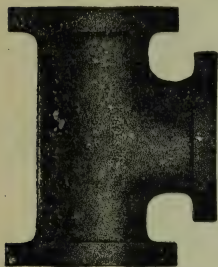
Size Pipe, inches	2	2½	3	3½	4	4½	5	6	7	8	9
Flanges, Faced only ...	7.75	8.50	9.50	10.75	12.00	15.00	16.50	19.50	24.00	30.00	39.00
Flanges, F'e'd and Dr'll'd	9.00	10.00	11.00	12.50	15.00	18.00	19.50	22.50	28.00	35.00	45.00

Size Pipe...inches	10	12	14	15	16	18	20	22	24
Flanges, Faced only .....	48.00	66.00	87.00	108.00	125.00	160.00	200.00	240.00	300.00
Flanges, Faced and Dr'll'd	54.00	75.00	97.00	120.00	140.00	175.00	220.00	270.00	330.00

Crane's Ferrosteeel or Malleable Extra Heavy Fittings quoted on application.

# EXTRA HEAVY FLANGED CAST-IRON FITTINGS

For 250 Pounds Working Pressure



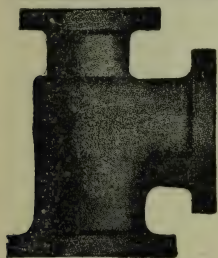
**B403**

## EXTRA HEAVY FLANGED TEE

See Diam. Flanges and drilling Template B416.

Dimensions, B430 and 431.

Pipe size.....inches	2	2½	3	3½	4	4½	5
Flanges faced only.....	10.50	11.50	12.50	14.50	16.00	19.50	21.00
Flanges faced and drilled...	12.50	13.50	15.00	17.00	20.00	24.00	26.00
Pipe size.....inches	6	7	8	9	10	12	14
Flanges faced only.....	26.00	34.00	43.00	57.00	70.00	96.00	125.00
Flanges faced and drilled...	31.00	42.00	51.00	66.00	78.00	110.00	140.00
Pipe size.....inches	15	16	18	20	22	24	
Flanges faced only.....	157.00	185.00	230.00	290.00	345.00	435.00	.....
Flanges faced and drilled...	172.00	200.00	250.00	320.00	375.00	475.00	.....



**B404**

## EXTRA HEAVY REDUCED FLANGED TEE

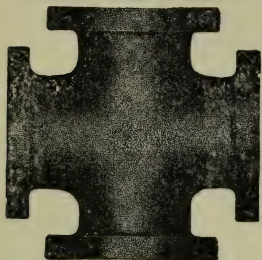
Reduced in run or Branch. See Diam. Flanges and drilling Template, B416. Dimensions, B430 and 431.

Pipe size.....inches	2	2½	3	3½	4	4½	5
Flanges faced only.....	12.00	13.00	14.50	16.50	18.00	22.50	24.50
Flanges faced and drilled...	14.00	15.00	17.00	19.00	20.00	27.00	30.00
Pipe size.....inches	6	7	8	9	10	12	14
Flanges faced only.....	30.00	40.00	50.00	65.00	80.00	110.00	145.00
Flanges faced and drilled...	35.00	48.00	58.00	74.00	88.00	124.00	160.00
Pipe size.....inches	15	16	18	20	22	24	
Flanges faced only.....	180.00	210.00	265.00	340.00	400.00	500.00	.....
Flanges faced and drilled...	195.00	225.00	285.00	370.00	430.00	540.00	.....

## EXTRA HEAVY FLANGE CAST-IRON FITTINGS

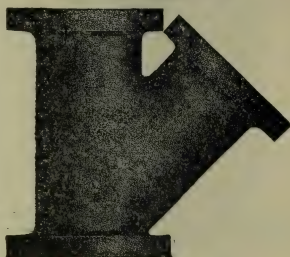
For 250 Pounds Working Pressure

### EXTRA HEAVY CROSS



**B405**

### EXTRA HEAVY Y



**B406**

See Diam. Flanged and Template Drilling, B416, Dimensions, B430 and 431.

### EXTRA HEAVY CROSS OR Y

Pipe Size.....inches	2	2½	3	3½	4	4½	5
Flanges Faced only.....	14.00	15.50	17.50	19.50	21.50	27.00	30.00
Flanges Faced and Drilled	17.00	18.50	21.00	23.00	27.00	33.00	36.00

Pipe Size.....inches	6	7	8	9	10	12	14
Flanges Faced only.....	36.00	48.00	60.00	78.00	96.00	132.00	174.00
Flanges Faced and Drilled	42.00	59.00	70.00	90.00	108.00	150.00	194.00

Pipe Size.....inches	15	16	18	20	22	24	
Flanges Faced only.....	215.00	250.00	320.00	400.00	480.00	600.00	.....
Flanges Faced and Drilled	240.00	280.00	350.00	440.00	540.00	660.00	.....

### EXTRA HEAVY REDUCING CROSS OR Y

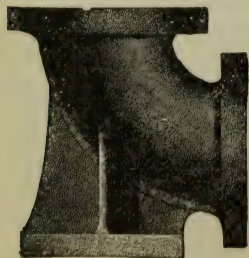
Pipe Size.....inches	2	2½	3	3½	4	4½	5
Flanges Faced only.....	16.50	18.00	20.50	22.50	25.50	31.00	34.00
Flanges Faced and Drilled	19.50	20.50	23.50	26.00	31.00	37.00	40.00

Pipe Size.....inches	6	7	8	9	10	12	14
Flanges Faced only.....	41.00	55.00	70.00	90.00	110.00	150.00	198.00
Flanges Faced and Drilled	47.00	66.00	80.00	102.00	122.00	168.00	218.00

Pipe Size.....inches	15	16	18	20	22	24	
Flanges Faced only.....	245.00	285.00	372.00	465.00	555.00	690.00	.....
Flanges Faced and Drilled	270.00	315.00	402.00	505.00	615.00	750.00	.....



**BASE  
ELBOW**

**B407**

**BASE  
TEE**

**B408**



Dimensions and prices  
on application

**EXTRA HEAVY FLANGED CAST-IRON FITTINGS  
SPECIAL PATTERNS**

Price and Dimensions quoted on application.

**LONG RADIUS ELBOW**



**B409**

**REDUCING ELBOW**



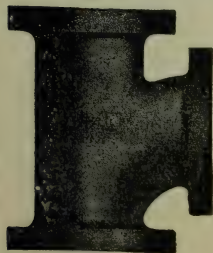
**B410**

**REDUCER**



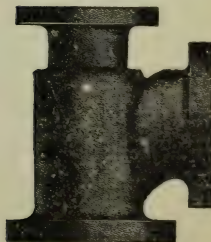
**B411**

**SINGLE SWEEP  
FLANGED TEE**



**B412**

**REDUCING SINGLE  
SWEEP FLANGED  
TEE**  
Reducing in Run  
or Branch

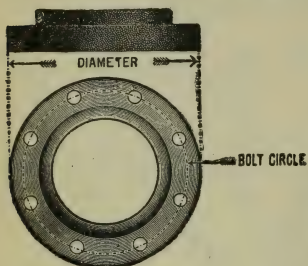


**B413**



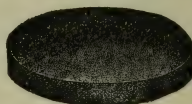
## EXTRA HEAVY COMPANION FLANGES

For Extra Heavy Valves and Fittings for 250 Pounds Working Pressure



B416

## BLIND FLANGE

16 Inches and Less 17½ Inches and Larger  
Diameter Diameter

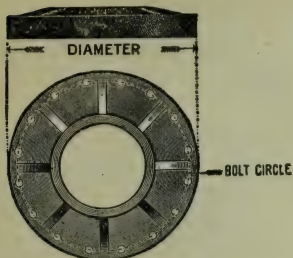
B417



B418

Size Inches	FACED FLANGES THREADED		BLIND FLANGES		DRILLING		
	Faced Each	Faced and Drilled Each	Faced Each	Faced and Drilled Each	Diam. Bolt Circle, Inches	Number of Bolts	Size of Bolts
1 x 4½					3¼	4	1½ x 2
1¼ x 5					3¾	4	1½ x 2¼
1½ x 6					4½	4	5⁄8 x 2½
2 x 6½	1.50	2.00	1.75	2.30	5	4	5⁄8 x 2½
2½ x 7½	2.00	2.50	2.30	2.75	5⅞	4	¾ x 3
3 x 8¼	2.25	3.00	2.60	3.35	6⅝	8	5⁄8 x 3
3½ x 9	2.50	3.50	2.95	3.95	7¼	8	5⁄8 x 3¼
4 x 10	3.00	4.00	3.50	4.50	7⅞	8	¾ x 3½
4½ x 10½	3.50	4.50	4.05	5.05	8½	8	¾ x 3½
5 x 11	3.75	5.00	4.35	5.65	9¼	8	¾ x 3¾
6 x 12½	4.25	5.75	4.95	6.50	10⅝	12	¾ x 4
7 x 14	5.75	7.25	6.65	8.10	11⅞	12	7⁄8 x 4
8 x 15	6.50	8.25	7.50	9.20	13	12	7⁄8 x 4¼
9 x 16	8.25	10.00	9.50	11.25	14	12	7⁄8 x 4½
10 x 17½	9.25	11.50	10.75	13.85	15¼	16	7⁄8 x 4¾
12 x 20	12.50	15.00	16.70	19.20	17¾	16	7⁄8 x 5
14 x 22½	16.00	18.50	20.40	22.90	20	20	7⁄8 x 5¼
15 x 23½	20.00	23.00	25.00	27.95	21	20	1 x 5½
16 x 25	25.00	28.50	31.15	34.55	22½	20	1 x 5¾
18 x 27	32.00	36.00	38.40	42.40	24½	24	1 x 6
20 x 29½	36.00	40.00	43.20	47.10	26¾	24	1⅛ x 6¼
22 x 31½	40.00	45.00			28¾	28	1⅛ x 6½
24 x 34	50.00	56.00			31¼	28	1⅛ x 6¾

NOTE.—All the Flanges on our Flanged Fittings are drilled in multiples of four, so that fittings may be made to face in any quarter, and holes straddle center line.



B419

## EXTRA HEAVY REDUCING COMPANION FLANGES

WITH RIBS; FOR EXTRA HEAVY VALVES  
AND FLANGED FITTINGS

For 250 Pounds Working Pressure

Size Inches	PRICE		Size Inches	PRICE		Size Inches	PRICE	
	Faced Each	Faced and Drilled Each		Faced Each	Faced and Drilled Each		Faced Each	Faced and Drilled Each
2 x 7½	2.65	3.80	5x14	8.40	11.00	14x23½	34.50	40.00
2 x 8¼	3.10	4.25	6x14	8.40	11.00	10x25	43.50	50.00
2½ x 8¼	3.10	4.25	5x15	9.60	12.50	12x25	43.50	50.00
2 x 9	3.50	4.80	6x15	9.60	12.50	14x25	43.50	50.00
2½ x 9	3.50	4.80	7x15	9.60	12.50	15x25	43.50	50.00
3 x 9	3.50	4.80	6x16	12.75	15.75	12x27	53.00	59.00
2½ x 10	4.10	5.75	7x16	12.75	15.75	14x27	53.00	59.00
3 x 10	4.10	5.75	8x16	12.75	15.75	15x27	53.00	59.00
3½ x 10	4.10	5.75	7x17½	14.75	18.00	16x27	53.00	59.00
3 x 10½	4.85	6.35	8x17½	14.75	18.00	14x29½	58.00	65.00
3½ x 10½	4.85	6.35	9x17½	14.75	18.00	15x29½	58.00	65.00
4 x 10½	4.85	6.35	8x20	20.10	24.00	16x29½	58.00	65.00
3½ x 11	5.50	7.00	9x20	20.10	24.00	18x29½	58.00	65.00
4 x 11	5.50	7.00	10x20	20.10	24.00	16x31½	64.00	75.00
4½ x 11	5.50	7.00	9x22½	26.00	31.00	18x31½	64.00	75.00
4 x 12½	6.15	7.65	10x22½	26.00	31.00	20x31½	64.00	75.00
4½ x 12½	6.15	7.65	12x22½	26.00	31.00	18x34	79.00	90.00
5 x 12½	6.15	7.65	10x23½	34.50	40.00	20x34	79.00	90.00
4½ x 14	8.40	11.00	12x23½	34.50	40.00	.....	.....	.....

It is not possible to carry in stock a line of Reducing Flange Fittings sufficiently large to meet all demands promptly. We aim to carry a complete line of straight sizes and a moderate line of reducing tees, but we do not attempt to cover all possible sizes.

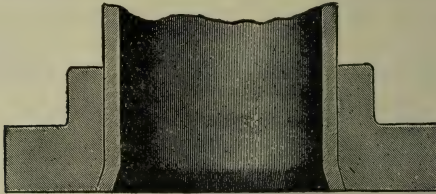
To avoid delay, we carry in stock a line of Reducing Ribbed Flanges as illustrated above. These flanges, used in connection with straight or reducing fittings carried in stock, enable us to fill orders for reduced sizes very promptly. Customers who desire fittings reduced in this manner will please specify, "Reduce by Flanges if necessary."

Reducing Flanges are made as per table above.

These flanges will always be the same thickness as the regular companion flanges of corresponding outside diameter and are always drilled to the template corresponding to the outside diameter unless otherwise ordered. **Drilling Template**, same as for corresponding diameters, B416.

## EXTRA HEAVY SHRUNK FLANGES

### SUITABLE FOR 250 POUNDS WORKING PRESSURE

**B420**

The flange to be shrunk on the pipe, peened firmly into the recess, and then the face of the flange and end of pipe turned off true.

Size.....inches	4	4½	5	6	7	8	9	10
Diameter of Flanges.....inches	10	10½	11	12½	14	15	16	17½
Price, Faced and Drilled and Shrunk on Pipe.....	19.00	20.00	21.00	22.00	26.00	29.00	32.00	34.00
Raised Face $\frac{1}{8}$ in. Male or Female, or Calking Recess, extra per Flange..	.65	.65	.65	.80	.80	1.00	1.00	1.00
Spot Facing Bolt Holes, per Flange..	.40	.40	.40	.60	.60	.60	.60	.80
Size.....inches	12	14	15	16	18	20	22	24
Diameter of Flanges.....inches	20	22½	23½	25	27	29½	31½	34
Price, Faced and Drilled and Shrunk on Pipe.....	40.00	45.00	48.00	53.00	61.00	70.00	85.00	100.00
Raised Face $\frac{1}{8}$ in. Male or Female, or Calking Recess, extra per Flange..	1.25	1.60	1.60	2.00	2.50	3.00	4.00	5.00
Spot Facing Bolt Holes, per Flange..	.80	1.00	1.00	1.00	1.20	1.20	1.40	1.40

Template for drilling, see page

**B421**

## STYLE C SHRUNK FLANGE

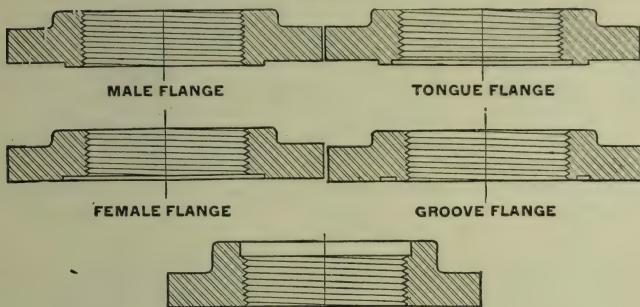
Back View

Style C is same as style D except has bosses at bolt holes as shown. This cut also shows rivet heads between the bolt bosses, showing how shrunk flanges may also be riveted onto large sizes of pipe. Prices on application.

# EXTRA HEAVY TONGUE AND GROOVE FLANGES MALE AND FEMALE FLANGES AND FLANGES WITH CALKING RECESS

Suitable for 250 Pounds Working Pressure

B422



**PLAIN FLANGE WITH CALKING RECESS**

Add to prices of Extra Heavy Flanges.

Size Inches	Add for Tongue or Groove Per Flange	Add for Male or Female Per Flange	Add for Calking Recess Per Flange
2½ x 7½	Net .65	Net .65	Net .65
3 x 8¾	Net .65	Net .65	Net .65
3½ x 9	Net .65	Net .65	Net .65
4 x 10	Net .65	Net .65	Net .65
4½ x 10½	Net .65	Net .65	Net .65
5 x 11	Net .65	Net .65	Net .65
6 x 12½	Net .80	Net .80	Net .80
7 x 14	Net .80	Net .80	Net .80
8 x 15	Net 1.00	Net 1.00	Net 1.00
9 x 16	Net 1.00	Net 1.00	Net 1.00
10 x 17½	Net 1.00	Net 1.00	Net 1.00
12 x 20	Net 1.25	Net 1.25	Net 1.25
14 x 22½	Net 1.60	Net 1.60	Net 1.60
15 x 23½	Net 1.60	Net 1.60	Net 1.60
16 x 25	Net 2.00	Net 2.00	Net 2.00

Bolt holes **Spot Faced** at special price.

## FORGED STEEL COMPANION FLANGES FOR 250 POUNDS WORKING PRESSURE B424

(Not Illustrated)

Size....inches	2½	3	3½	4	4½	5	6	7	8	9	10	12
Diam. Flanges, .....inches	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20
Faced only, .....each	7.00	8.00	9.25	10.75	12.25	13.50	16.50	19.00	22.00	27.50	37.00	46.00
Faced and Drilled, each	8.00	9.00	10.50	12.00	13.50	15.00	18.00	21.00	24.00	30.00	40.00	50.00
Thickness Flanges, inches	1½	¾	1½	1½	1½	1½	1	1 ⅛	1 ⅛	1 ⅛	1 ⅛	1 ¼

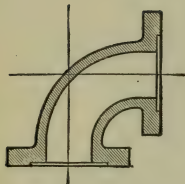
Drilling is the same as Extra Heavy Cast Flanges, B416.

Larger sizes quoted on application.

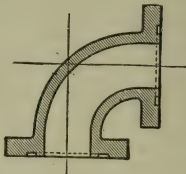


EXTRA HEAVY FITTINGS

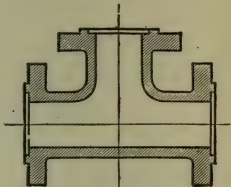
Suitable for 250 Pounds Working Pressure  
Male and Female and Tongued Grooved Fittings



Elbow with Female  
Flanges



Elbow with Grooved  
Flanges



Tee with Tongued  
Flanges

B425

Extra per Fitting with Either Tongued, Grooved, Male or Female Flanges

Size.....Inches	2½	3	4	5	6	7	8	9	10	12	14	15	16
Add to Flanged Elbows Net, each	1.25	1.25	1.25	1.25	1.50	1.50	2.00	2.00	2.00	2.50	3.25	3.25	4.00
Add to Flanged Tees....Net, each	1.75	1.75	1.75	1.75	2.00	2.00	2.50	2.50	2.50	3.00	4.00	4.00	5.00
Add to Flanged Crosses Net, each	2.25	2.25	2.25	2.25	2.50	2.50	3.00	3.00	3.00	3.50	5.00	5.00	6.00
Add to Flanged Laterals Net, each	2.25	2.25	2.25	2.25	2.50	2.50	3.00	3.00	3.00	3.50	5.00	5.00	6.00

Bolt Holes, Spot Faced at special price.  
Semi-steel Fittings quoted on application.

A drawing of these fittings should accompany order to avoid mistakes.  
The length, center to face and face to face, of Male, Female, Tongued or Grooved Flanged Fittings is the same as plain faced Flanged Fittings, the measurements being from face of Flange and not from tongue or recess.

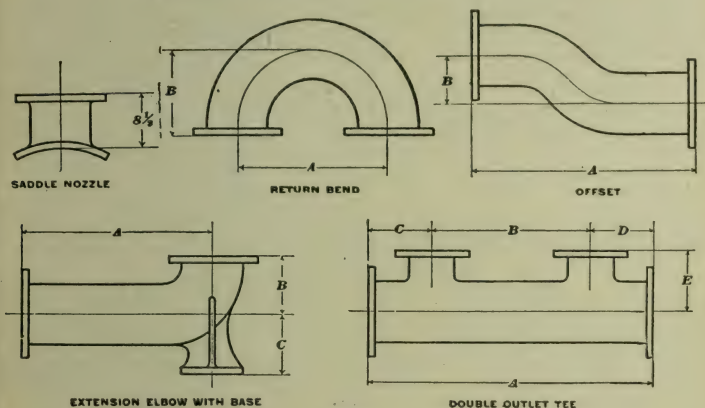
Gaskets for Flanged Fittings and Valves. B426.

Size Inches	RING GASKETS, $\frac{1}{16}$ INCH THICK				Size Inches	FULL GASKETS, $\frac{1}{16}$ IN. THICK			
	Inside Diam. Inches	Outside Diameter Inches		Rainbow or Corrugated Copper Each		Inside Diam. Ins.	O. S. Diam., Inches		Rainbow or Cor. Cop. Each
		Standard	Ex. Hea.				Stand.	Ex. Hea.	
2	2	4	4 $\frac{1}{4}$	.45	2	2	6	6 $\frac{1}{2}$	.85
2 $\frac{1}{2}$	2 $\frac{1}{2}$	5	5	.55	2 $\frac{1}{2}$	2 $\frac{1}{2}$	7	7 $\frac{1}{2}$	1.10
3	3	5 $\frac{1}{4}$	6	.65	3	3	7 $\frac{1}{2}$	8 $\frac{1}{4}$	1.75
3 $\frac{1}{2}$	3 $\frac{1}{2}$	6 $\frac{1}{4}$	6 $\frac{1}{2}$	.75	3 $\frac{1}{2}$	3 $\frac{1}{2}$	8 $\frac{1}{2}$	9	1.85
4	4	6 $\frac{3}{4}$	7	.90	4	4	9	10	2.00
4 $\frac{1}{2}$	4 $\frac{1}{2}$	7	7 $\frac{3}{4}$	1.00	4 $\frac{1}{2}$	4 $\frac{1}{2}$	9 $\frac{1}{4}$	10 $\frac{1}{2}$	2.25
5	5	7 $\frac{3}{4}$	8 $\frac{1}{2}$	1.10	5	5	10	11	2.50
6	6	8 $\frac{1}{4}$	9 $\frac{1}{4}$	1.30	6	6	11	12 $\frac{1}{2}$	3.00
7	7	10	11	1.60	7	7	12 $\frac{1}{2}$	14	3.50
8	8	11	12	2.25	8	8	13 $\frac{1}{2}$	15	4.50
9	9	12 $\frac{1}{2}$	13	2.75	9	9	15	16	5.50
10	10	13 $\frac{1}{4}$	14 $\frac{1}{4}$	3.00	10	10	16	17 $\frac{1}{2}$	6.00
12	12	16	16 $\frac{3}{4}$	4.25	12	12	19	20	8.00
14	13 $\frac{1}{4}$	17 $\frac{1}{4}$	19	5.00	14	13 $\frac{1}{4}$	21	22 $\frac{1}{2}$	8.50
15	14 $\frac{1}{4}$	19	20	5.25	15	14 $\frac{1}{4}$	22 $\frac{1}{4}$	23 $\frac{1}{2}$	9.00
16	15 $\frac{1}{4}$	20 $\frac{1}{4}$	21 $\frac{1}{2}$	5.50	16	15 $\frac{1}{4}$	23 $\frac{1}{2}$	25	9.25
18	17 $\frac{1}{4}$	21 $\frac{3}{4}$	23 $\frac{1}{2}$	6.00	18	17 $\frac{1}{4}$	25	27	11.00

# SPECIAL FLANGED FITTINGS

SUITABLE FOR 250 POUNDS WORKING PRESSURE

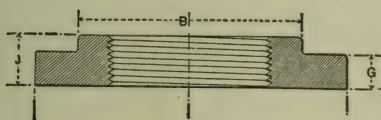
(Also Made Lighter for Ordinary Pressures)



B427

Prices quoted on application.

## DIMENSIONS OF EXTRA HEAVY COMPANION FLANGES



B428

Pipe size.....Inches	2	2½	3	3½	4	4½	5
Diameter of flange.....Inches	6½	7½	8½	9	10	10½	11
Thickness " "....."	¾	1	1½	1¾	1½	1¾	1¾
Length of thread, Pittsburg....."	1½	1¾	1½	1½	1½	1½	1½
" " " Crane....."	1¾	1¾	1½	1½	1¾	1½	1½
Pipe Size.....Inches	6	7	8	9	10	12	14
Diameter of flange.....Inches	12½	14	15	16	17½	20	22½
Thickness " "....."	1¾	1½	1½	1¾	1¾	2	2½
Length of thread, Pittsburg....."	1½	2	2½	2½	2½	2½	2½
" " " Crane....."	2	2½	2½	2½	2½	2½	2½
Pipe size.....Inches	15	16	18	20	22	24	
Diameter of flange.....Inches	23½	25	27	29½	31½	34	
Thickness " "....."	2¾	2½	2¾	2½	2½	2¾	
Length of thread, Pittsburg....."	2¾	2¾	3	3	3	3	
" " " Crane....."	2½	2¾	3	3	3	3	

Semi-steel Fittings quoted on application.

## DIMENSIONS

## PITTSBURG

## EXTRA HEAVY FLANGED FITTINGS—B430

Reduction in the run of a Tee or Cross does not change the face to face measure. Diameter, etc., of Flanges on Fittings is same as Companion Flanges, B416.

Pipe, Size of Run..in.	2	2½	3	3½	4	4½	5	6	7	8
Face to Face, A.A..in.	10½	11½	12½	13½	14	15	16	17	19	20
Center to Face, A.. "	5¼	5¾	6¼	6¾	7	7½	8	8½	9½	10
C. to F, 45°, Ell C. "	3	3¼	3¾	4	4¼	4½	4¾	5¼	5¾	6
C. to F, Y, Short End D... "	2¼	2½	3	3¼	3½	3¾	4	4¼	4½	4¾
C. to F, Y, Long End E... "	8½	9	10½	11	12	12¾	13¼	15¾	17	18½
Pipe, Size of Run..in.	9	10	12	14	15	16	18	20	22	24
Face to Face, A.A..in.	21½	23	25½	29	30	31	34	36	39	42
Center to Face, A.. "	10¾	11½	12¾	14½	15	15½	17	18	19½	21
C. to F, 45°, Ell C. "	6¼	6½	7¼	8¾	8¾	9	9½	10¼	11	11½
C. to F, Y, Short End D... "	5¼	5½	6¼	6½	7	7¾	8¾	8½	9¼	10
C. to F, Y, Long End E... "	19¾	21	24	27¾	28¾	30½	32¼	35	38	41

Reducing Y's are same measurements as straight Y's.

## REDUCED TEES AND CROSSES

Reduction on run does not change face to face measurement as given in above table. Tees and Crosses, 8-inch and smaller, with reduced outlet, take same measurements face to face (F. F. or N. N.) and center to face (K. or O.) as straight fittings. (See above table.)

Tees and Crosses, 9-inch and larger, with outlet 8-inch and smaller, all have same dimensions face to face (F. F. or N. N.) and center to face (K. or O.) as that size fitting with 8-inch outlet. (See table below.)

### TABLE SHOWING DIMENSIONS OF TEES AND CROSSES, 9-INCH AND LARGER, HAVING REDUCED OUTLET

Top line shows center to face measurement of outlets. Right-hand column shows face to face measurements of run.

CENTER TO FACE OF OUTLETS K. OR O.										Face to Face (F. F. or N. N.)
10¾	11½	12¾	14½	15	15½	17	18	19½	21	
SIZE OF FITTINGS										
* 10x8	12x8	14x8	15x8	16x8	18x8	20x8	22x8	24x8		20
9x8										21½
10x9										23
	12x10	14x12	15x12	16x12	18x12	20x12	22x12	24x12		
	12x9	14x10	15x10	16x10	18x10	20x10	22x10	24x10		25½
	12x9	14x9	15x9	16x9	18x9	20x9	22x9	24x9		
			15x14							30
*9-inch and larger Tees and Crosses, with outlets smaller than 8-inch, are same dimensions face to face and center to face as fittings with 8-inch branch.				16x15		20x16	22x16	24x16		
				16x14		20x15	22x15	24x15		31
					18x16	20x14	22x14	24x14		
					18x15					34
					18x14					
8-inch and smaller Reducing Tees and Crosses are same dimensions face to face and center to face as straight fittings.						20x18	22x20	24x20		36
Tees with outlet larger than the run take same measurements face to face and center to face as a straight Tee of the same size as the outlet.							22x18	24x18		
								24x22		39

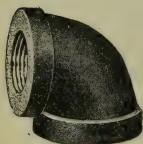




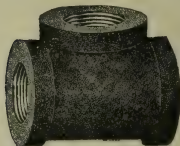
## EXTRA HEAVY CAST-IRON FITTINGS

Screwed

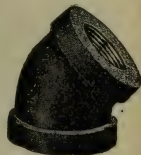
For a Working Pressure of 250 Pounds

EXTRA HEAVY  
ELBOW

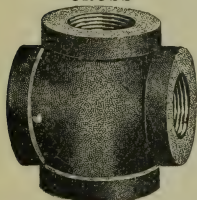
B432

EXTRA HEAVY  
TEE

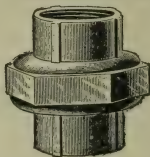
B434

EXTRA HEAVY  
45° ELBOW

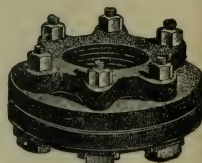
B433

EXTRA HEAVY  
CROSS

B435

EXTRA HEAVY  
SCREW UNION  
See B190 and 194  
Kewanee and Dart

B436

EXTRA HEAVY  
FLANGE UNION

B437

## EXTRA HEAVY CAST-IRON FITTINGS

For Plugs, see solid plugs, B203½.

Size..... inches	½	¾	1	1¼	1½	2	2½	3	3½
Elbows.....each	.25	.30	.35	.45	.60	.75	1.25	2.00	2.75
“ Reducing..... “	..	.42	.50	.65	.85	1.05	1.75	2.85	4.00
“ 45°..... “	..	.40	.44	.55	.70	.90	1.50	2.50	3.50
Tees..... “	.40	.50	.55	.70	.90	1.15	1.80	3.00	4.25
“ Reducing..... “	..	.65	.75	1.00	1.25	1.60	2.50	4.25	6.00
Crosses..... “	..	.75	1.00	1.25	1.60	2.00	3.25	5.50	7.75
“ Reducing..... “	..	1.05	1.25	1.75	2.15	2.85	4.60	7.75	11.00
Flange Union*..... “	..	.70	.80	1.00	1.15	1.50	1.90	2.25	2.70
Number Bolts, Union.....	..	4	4	4	4	5	5	6	6
Size..... inches	4	4½	5	6	7	8	10	12	..
Elbows.....each	3.50	4.25	5.50	8.00	12.00	17.00	28.00	40.00	....
“ Reducing..... “	4.75	5.75	7.50	10.00	15.00	22.00	35.00	50.00	....
“ 45°..... “	4.50	5.50	6.75	9.75	14.50	21.00	34.00	48.00	....
Tees..... “	5.50	6.75	8.25	12.00	18.00	25.00	42.00	60.00	....
“ Reducing..... “	7.25	9.00	11.50	15.00	23.00	32.00	53.00	75.00	....
Crosses..... “	10.00	13.00	15.00	22.00	33.00	45.00	75.00	110.00	....
“ Reducing..... “	13.75	17.50	21.00	27.50	42.00	57.00	94.00	138.00	....
Flange Union..... “	3.15	4.00	4.75	6.00	8.25	10.50	....	....	....
Number Bolts, Union.....	7	8	8	9	10	10	....	....	....

Galvanized Extra Heavy Fittings, double above list, 9-in. fittings special.

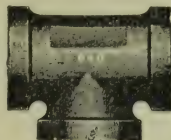
\*See also Kewanee and Dart Flange Unions, B196-7.

# EXTRA HEAVY MALLEABLE FITTINGS

SQUARE BEAD—FOR 250 POUNDS WORKING PRESSURE



B438



B439

Size.....inch	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Elbow.....each	.20	.25	.30	.35	.40	.55	.70
45° Elbow....."	.25	.30	.35	.42	.50	.65	.85
Tee....."	.30	.40	.45	.50	.60	.80	1.05
Cross....."	.60	.80	.90	1.00	1.20	1.60	2.10

Size.....inches	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Elbow.....each	.90	1.50	2.40	3.25	4.25	6.50	9.50
45° Elbow....."	1.10	1.85	2.85	4.00	5.00	.....	.....
Tee....."	1.35	2.25	3.60	5.00	6.50	9.75	14.25
Cross....."	2.70	4.50	7.20	10.00	13.00	19.50	28.50

Tees can also be furnished in reducing sizes.

# CAR HEATER FITTINGS

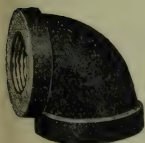
CAST IRON—EXTRA HEAVY—FOR RAILROAD USE

ELBOW

CAST-IRON  
COUPLING

RETURN BEND

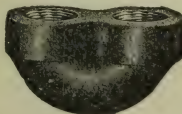
TEE



B440



B441



B442



B443

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Elbows, R. H.....each	.22	.25	.27	.30	.45	.45	.55
" R. and L....."	.22	.25	.27	.30	.45	.45	.55
Coupling, R. H....."	.....	.....	.25	.30	.45	.....	.55
" R. and L....."	.....	.....	.35	.40	.55	.....	.65

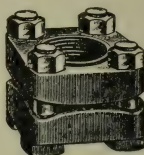
Size...inches	$\frac{1}{4}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2} \times 1\frac{1}{2}$	$1\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$	$1\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$	2
Tees.....each	.30	.35	.40	.45	.45	.45	.65	.85
Distance between Centers.....inches				$2\frac{3}{8}$	3	4	5	$7\frac{1}{2}$
Return Bends, $1\frac{1}{4}$ -inch.....each				.45	.50	.60	.70	1.10

## EXTRA HEAVY HYDRAULIC FITTINGS MALLEABLE IRON

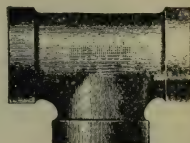
For 800 Pounds Working Pressure. Tested to 2,000 Pounds



B444



B445



B446

Price each

Inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Elbow	.20	.25	.30	.35	.40	.55	.70	.90	1.50	2.40	3.25	4.25
Tee	.30	.40	.45	.50	.60	.80	1.05	1.35	2.25	3.60	5.00	6.50
Cross	.60	.80	.90	1.00	1.20	1.60	2.10	2.70	4.50	7.20	10.00	13.00
Flange Union					1.50	1.75	2.25	3.00	6.00	9.00		

Reducing fittings can be furnished of Malleable Iron from Standard Cast-Iron Fitting pattern.

We specify these fittings tested to 2,000 pounds, but we have subjected them to a hydraulic pressure of 5,000 pounds without breaking.

They are, therefore, suitable for a very much higher working pressure than 800 pounds.

When fittings are wanted for a higher working pressure than 800 pounds, or larger sizes, please state at what working pressure they are to be used.

## EXTRA HEAVY HYDRAULIC BRASS SCREW UNIONS

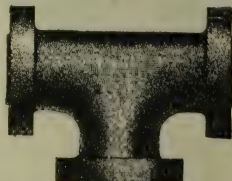
Size.....Inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each	1.25	1.50	2.00	3.00	4.00	5.00	7.00	10.00

Hydraulic Brass Ells, Tees, Crosses, and Couplings quoted on application.

## HYDRAULIC FLANGED CAST-IRON FITTINGS Ells, Tees, and Crosses for 800 Pounds Working Pressure



B447



B448

With Male or Female Flanges. Prices on application.

## HYDRAULIC COMPANION FLANGES

Malleable Iron

Quoted on application.

Male or Female

AMMONIA VALVES AND FITTINGS—GLAND END



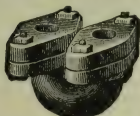
STRAIGHT VALVE B



CHECK VALVE C



TEE D



RETURN BEND E



COUPLING F

OVAL AND SQUARE FLANGE VALVES AND FITTINGS



STRAIGHT VALVE G



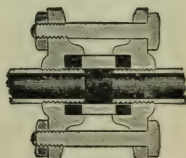
ELBOW H



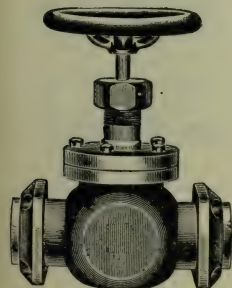
TEE I



RETURN  
BEND K



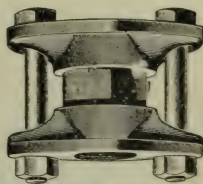
SECTION VIEW



STRAIGHT VALVE J



TEE M



BOYLE UNION

These pages only illustrate a few fittings of the different style of Ammonia Fittings. Specify just what is wanted and we will quote prices. See B76 and 77 for Ammonia Coils.



## AMMONIA VALVES AND FITTINGS— SCREWED

Also Made With Regular Round Flanges



Straight Valve P



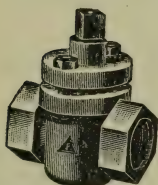
Tee Q



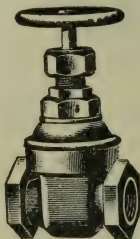
Ell R



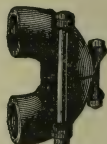
Tee S  
Recessed



Asbestos Packed Cock T



Gate Valve U



Split Return  
Bend V

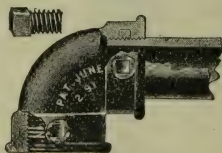


Brine Return  
Bend W

## TIGHT JOINT AMMONIA FITTINGS



X

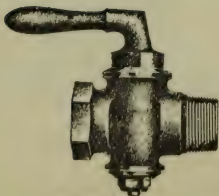


Y

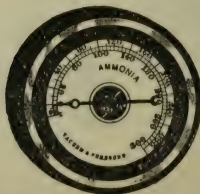


Z

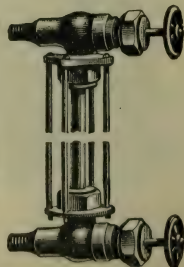
## MISCELLANEOUS



Brine Cock



Pressure or Vacuum Gauge



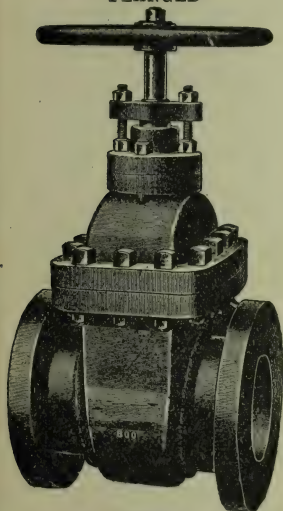
Liquid Am. Gauge

These pages illustrate a few fittings of the different styles of Ammonia Fittings. Specify your requirements and we will quote prices. See B76 and 77 for Am. Coils.

# **EXTRA HEAVY IRON BODY** **STRAIGHT-WAY GATE VALVES**

With Hard Metal Seats Screwed in—Stationary Brass Stem  
 Tested 800 pounds—for 250 pounds Working Pressure

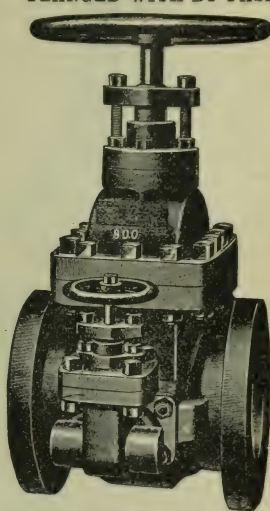
**FLANGED**



**B500**

Screwed 2 to 10 inch,  
 Flanged all sizes

**FLANGED WITH BY-PASS**



**B501**

Flanged Only  
 6 to 16 inch

## **PRICE LIST**

Brass or "High Duty Metal" trimmed, also Crane Ferrosteeel Valves  
 Screwed and Flanged

Size.....inches	1¼	1½	2	2½	3	3½	4	4½	5
A.....each	20.00	22.50	27.50	35.00	40.00	45.00	50.00	60.00	65.00
End to End, Screwed, inches	5½	6¼	7	8	9	10	11	12¼	13¼
Face to Face, Flanged.. "	6½	7½	8½	9½	11½	11½	12	13¼	15
Diameter Flanges..... "	5	6	6½	7¼	8¼	9	10	10½	11
Size.....inches	6	7	8	9	10	*12	*14-15	*16	
A.....each	80.00	100.00	120.00	160.00	200.00	300.00	400.00	550.00	
A with By-pass ..	110.00	130.00	150.00	200.00	250.00	350.00	450.00	600.00	
Face to F. Flg. or Sc'd.. ins.	15½	16¼	16½	17	18	19¾	22¼	24	
Diam. Flanges ..	12½	14	15	16	17½	20	22½-23½	25	

Template for Drilling, same as "Companion Flanges, Extra Heavy," see index.

\*Flanged only 12-inch and larger. Larger sizes quoted on application.

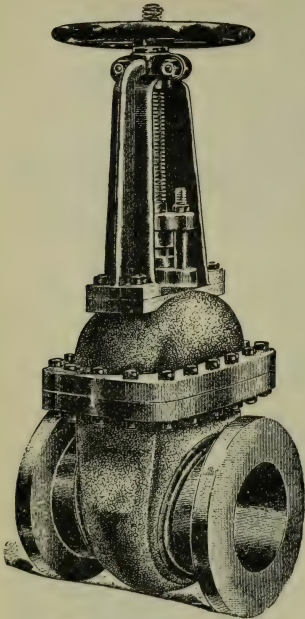
For Tapped and Grooved or Male and Female Flanges, see index.

These valves may be packed while wide open.

Angle Gates and Valves with Ribbed Bodies quoted on application.

Valves for Super-Heated Steam quoted on applic. on.

**ALL IRON EXTRA HEAVY NATURAL GAS VALVES, see "Gas Goods" in index**



B502

**EXTRA HEAVY**  
**STRAIGHT WAY VALVES**

WITH OUTSIDE SCREW AND YOKE  
With Hard Metal Seats Screwed in  
SUITABLE FOR A WORKING PRESSURE  
OF 250 POUNDS

Tested to 800 Pounds Pressure per  
Square Inch

SCREWED OR FLANGED

VALVES WITH BY-PASS ARE FLANGED  
ONLY

List Prices of  
**IRON BODY BRASS MOUNTED  
VALVES**

Also with "High Duty Metal" Trimming  
and Crane Ferrosteel Valves

**SCREWED OR FLANGED**

Size.....inches	1¼	1½	2	2½	3	3½	4	4½	5
Each.....	27.50	30.00	35.00	45.00	50.00	60.00	65.00	75.00	85.00
End to End Screwed...inches	5½	6¼	7	8	9	10	11	12¼	13½
Face to Face Flanged "	6½	7½	8½	9½	11½	11½	12	13¼	15
Diameter Flanges..... "	5	6	6½	7½	8¼	9	10	10½	11

Size.....inches	6	7	8	9	10	*12	*14-15	*16	....
Each.....	105.00	125.00	150.00	200.00	250.00	350.00	450.00	600.00	....
With By-pass (Flanged only)	135.00	155.00	185.00	240.00	300.00	400.00	500.00	650.00	....
End to End Screwed...inches	15½	16¼	16½	17	18	....	....	....	....
Face to Face Flanged "	15½	16¼	16½	17	18	19¾	22½	24	....
Diameter Flanges..... "	12½	14	15	16	17½	20	22½-23½	25	....

Size.....inches	18	20	22	24
Flanged with By-pass.....	850.00	1,150.00	1,450.00	1,850.00
Diameter Flanges.....inches	27	29½	31½	34

Template for drilling, same as Extra Heavy Fittings, B416. See index.

\*Flanged only 12-inch and larger sizes.

Valves may be packed when wide open.

Angle Gate Valves quoted on application



# EXTRA HEAVY IRON BODY, BRASS MOUNTED GATE VALVES—(CONTINUED)

For 250 Pounds Steam Working Pressure

Diameter of Flanges and Drilling Template, same as Companion Flanges,  
Extra Heavy; see index.

## PRICE EACH

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8
<b>Scott's</b> { Sta. Stem..	35.00	40.00	45.00	50.00	60.00	65.00	80.00	100.00	120.00	150.00
Ser. & Flgd. { 0. Ser. & Yoke	45.00	50.00	60.00	65.00	75.00	85.00	105.00	125.00	150.00	180.00
By-pass extra	.....	.....	.....	.....	.....	.....	20.00	25.00	35.00	45.00
Fl'g'd, Face to F....in.	9½	10¼	11	11½	12½	13½	15¾	16½	17¾	19
<b>Fairbanks</b> { Sta. Stem..	11.25	16.15	21.00	27.35	30.75	37.50	40.50	51.00	61.50	77.25
Ser. & Flgd. { 0. Ser. & Yoke	22.00	26.25	32.25	39.00	43.50	52.00	60.00	74.00	90.00	110.00
By-pass extra	.....	.....	.....	.....	.....	.....	22.50	24.25	27.50	27.50
Fl'g'd, Face to F....in.	8½	9½	10½	11¼	12	12¼	14	14½	15	16
<b>Lunk'h'r</b> { Sta. Stem..	28.00	36.00	41.00	46.00	51.00	61.00	66.00	81.00	100.00	120.00
Ser. & Flgd. { 0. Ser. & Yoke	36.00	46.00	51.00	61.00	66.00	76.00	86.00	110.00	130.00	150.00
"Victor" { By-pass extra	.....	.....	.....	.....	.....	.....	14.00	20.00	25.00	40.00
Fl'g'd, Face to F....in.	6½	7½	8½	9	9½	10¾	12¾	13½	15	16½
<b>Empire</b> { Sta. Stem..	27.50	35.00	40.00	45.00	50.00	60.00	65.00	80.00	100.00	120.00
Ser. & Flgd. { 0. Ser. & Yoke	35.00	45.00	50.00	60.00	65.00	75.00	85.00	105.00	125.00	150.00
By-pass extra	.....	.....	.....	.....	.....	.....	.....	.....	.....	35.00
<b>Chapman</b> { Screwed...	12.00	21.50	26.50	29.50	35.00	44.50	52.00	63.50	75.50	90.00
Sta. Stem.. { Flanged...	13.50	22.50	28.50	31.50	37.50	46.50	54.00	66.50	81.50	96.50
(List 43) { By-pass extra	.....	.....	.....	.....	.....	.....	17.00	17.00	18.00	21.00
Outside { Screwed...	16.00	25.00	30.50	35.50	42.50	53.00	58.00	72.00	85.00	101.00
Ser. & Yoke { Flanged...	17.00	26.50	32.50	37.50	45.50	55.00	60.00	75.50	91.50	107.00
(List 43) { By-pass extra	.....	.....	.....	.....	.....	.....	19.50	19.50	20.25	24.00
<b>Ludlow</b> { Double } Ser'd.	11.00	15.00	19.50	21.50	24.00	33.00	38.00	49.50	59.00	69.00
List No. 5½ { Gate } Fl'g'd	13.50	19.00	23.50	25.25	28.00	36.00	41.00	55.00	64.50	73.00
Add for 0. Screw and Yoke.....	8.00	10.00	10.00	18.50	18.50	19.00	19.00	21.00	24.00	28.00

Size.....inches	9	10	12	*14	*15	*16	*18	*20	*22	*24
<b>Scott's</b> { Sta. Stem..	160.00	200.00	300.00	400.00	.....	550.00	750.00	.....	.....	.....
Ser. & Flgd. { 0. Ser. & Yoke	200.00	250.00	350.00	450.00	.....	600.00	800.00	†1150.	.....	†1850.
By-pass extra	40.00	50.00	50.00	50.00	.....	50.00	50.00	.....	.....	.....
Fl'g'd, Face to F....in.	18½	19	21½	22¾	.....	24¼	26	29	.....	32
<b>Fairbanks</b> { Sta. Stem..	95.00	109.50	150.00	200.00	.....	265.00	332.00	405.00	.....	810.00
Ser. & Flgd. { 0. Ser. & Yoke	134.00	158.00	218.00	300.00	.....	383.00	533.00	646.00	.....	1100.
By-pass extra	27.50	27.50	35.50	35.50	.....	67.75	67.75	74.25	.....	103.00
Fl'g'd, Face to F....in.	15½	17¼	20	22	.....	23¾	24½	26½	.....	31
<b>Lunk'h'r</b> { Sta. Stem..	.....	205.00	305.00	405.00	405.00	560.00	.....	.....	.....	.....
Ser. & Flgd. { 0. Ser. & Yoke	.....	255.00	355.00	455.00	455.00	610.00	.....	.....	.....	.....
By-pass extra	.....	50.00	50.00	50.00	50.00	50.00	.....	.....	.....	.....
Fl'g'd, Face to F....in.	.....	19	19¾	21¼	22½	24	.....	.....	.....	.....
<b>Empire</b> { Sta. Stem..	160.00	200.00	300.00	400.00	400.00	550.00	.....	.....	.....	.....
Ser. & Flgd. { 0. Ser. & Yoke	200.00	250.00	350.00	450.00	450.00	600.00	†850.	†1150.	†1450.	†1850.
By-pass extra	40.00	50.00	50.00	50.00	50.00	50.00	.....	.....	.....	.....
Ser. & Flgd., F. to F...in.	17	18	19¾	22½	22½	24	26	28	.....	31
<b>Chapman</b> { Sta. Stem..	116.00	138.00	190.00	238.00	280.00	315.00	390.00	472.00	561.00	670.00
Flanged { 0. Ser. & Yoke	125.00	146.00	195.00	243.00	296.00	332.00	413.00	487.00	594.00	703.00
(List 43) { By-pass extra	25.00	26.00	32.00	34.00	36.00	70.00	73.00	96.00	99.00	101.00
<b>L'dl'w</b> { Dbl. } Sta. Stem...	95.00	110.00	148.00	.....	By-pass, on 6 to 10-in., add	.....	.....	.....	.....	.....
Flanged } Gate } 0. S. and Yoke	125.00	140.00	181.00	.....	Valves are known as Ludlow List No. 5½	.....	.....	.....	.....	.....

†Price with By-pass is for Outside Screw and Yoke Valves; on Stationary Stem Valves price is usually slightly less.

‡See Chapman By-pass Valve, List 43¼, Chapman Catalogue, about 5% lower price.

\*Valves larger than 12-inch are made Flanged only, except Scott 14-inch and Empire 14, 15, and 16-inch, which can be furnished Screwed.

"Victor" Valves can be made of Semi-Steel at special price.

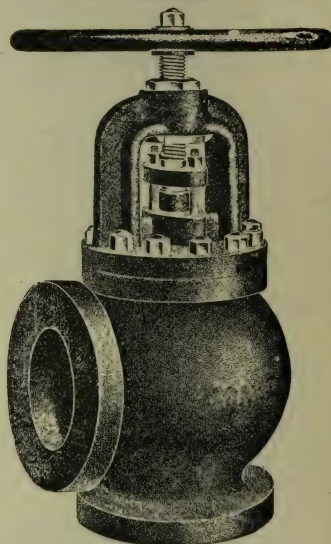


# **EXTRA HEAVY IRON BODY GLOBE ANGLE AND CROSS VALVES**

With Yoke. Hard Metal Seats.

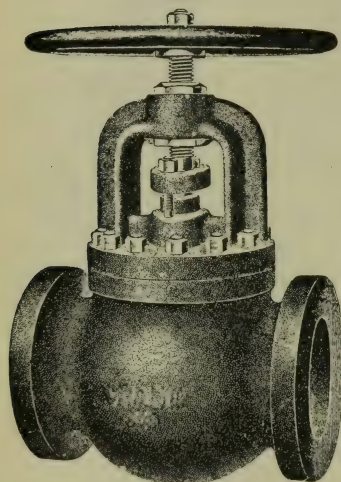
Suitable for Steam Working Pressure of 250 Pounds.

ANGLE



B506

GLOBE



B505

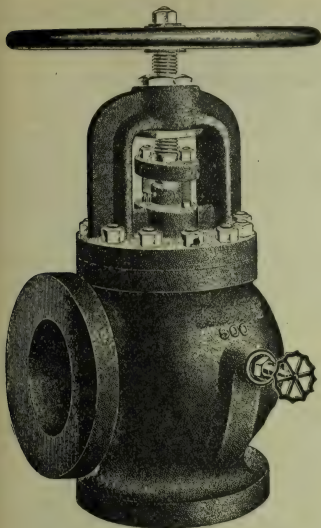
Can be furnished with by-pass if desired.

Price list applies to valves with "High Duty Metal" trimmings and Crane Ferrosteeel Valves, also to Scott Valves.

Size.....Inch	2	2½	3	3½	4	4½	5
Globe & ) Screwed..each	26.00	33.00	37.00	42.00	46.00	56.00	61.00
Angle ) Flanged.. "	27.50	35.00	40.00	45.00	50.00	60.00	65.00
Cross ) Screwed.. "	33.00	40.00	45.00	50.00	55.00	70.00	75.00
Valve ) Flanged.. "	35.00	43.00	50.00	55.00	60.00	75.00	80.00

Size.....Inch	6	7	8	10	12	14	15
Globe & ) Screwed..each	75.00	95.00	114.00	190.00	.....	.....	.....
Angle ) Flanged.. "	80.00	100.00	120.00	200.00	300.00	400.00	400.00
Cross ) Screwed.. "	95.00	120.00	145.00	240.00	.....	.....	.....
Valve ) Flanged.. "	100.00	125.00	150.00	250.00	375.00	500.00	500.00
By-pass on Flanged Valves Added....	30.00	59.00	50.00	50.00	50.00	50.00	50.00

For Dimensions, see page 103.



B507

**ILLUSTRATES  
EXTRA HEAVY ANGLE  
VALVE**

**WITH BY-PASS**

**For 250 Pounds Steam Working Pressure**

The By-pass attachment can be furnished on either the Globe Angle or Cross Valve, as noted at bottom of list on page 102.

**EXTRA HEAVY  
IRON BODY GLOBE, ANGLE  
AND CROSS VALVES**

See price list on page 102.

**DIMENSIONS**

With and Without By-Pass

**"HIGH DUTY METAL" TRIMMED GLOBE AND ANGLE  
VALVES. Listed Page 102**

Size.....inches	2½	3	4	5	6	7	8	10	12
Globe Valve } screwed ...in.	10⅝	11¾	13	14⅞	16½	18¼	20	23¼	....
Face to Face } flanged.... "	11½	12½	14	15¾	17½	19¼	21	24½	28
Angle Valve } screwed.... "	5⅝	5⅞	6½	7⅞	8¼	9¼	10	11⅞	....
Center to Face } flanged.... "	5¾	6¼	7	7⅞	8¾	9⅞	10½	12¼	14
Diameter of Flanges..... "	7½	8¼	10	11	12½	14	15	17½	20

Template for Drilling, see B416.

**DIMENSIONS CRANE FERROSTEEL VALVES**

As listed on page 102.

Size.....inches	2	2½	3	3½	4	4½	5	6	7 to 12	14	15
Globe or Cr. } scr...in.	9½	10¾	11¾	12¼	13	14	15	16½	Same	...	....
Face to F. } flg... "	10½	11½	12½	13¼	14	15	15¾	17½	Dimen-	33	33
Ang. or Cr. } scr... "	4¾	5¾	5¾	6¼	6½	7	7½	8¼	sions as	....	....
Center to F. } flg... "	5¼	5¾	6¼	6⅝	7	7½	7⅞	8¾	Table	16½	16½
Diam. of Flgs..... "	6½	7½	8¼	9	10	10½	11	12½	Above	22½	23½

Template for Drilling same as Extra Heavy Flanges. See B416.

**SCOTT'S GLOBE AND ANGLE VALVES. Listed Page 102**

Size.....inches	2½	3	4	5	6	7	8	10	12
Globe Valve } screwed ...in.	10	11	12½	14¼	16	17	19	21½	....
Face to Face } flanged.... "	11	12	13½	15¼	17	18	20	23	25
Angle Valves } screwed.. "	5	5½	6¼	7⅞	8	8½	9	10¼	....
Center to Face } flanged.. "	5½	6¼	6¾	7⅞	8½	9	9½	11	12½
Diameter of Flanges..... "	7½	8¼	10	11	12½	14	15	17½	20

Template for Drilling same as Extra Heavy Flanges. See B416.

## JENKINS BROS.' EXTRA HEAVY IRON BODY GLOBE, ANGLE, AND CHECK VALVES

For 250 Pounds Steam Pressure. Iron Body, Brass Mounted

With Steam Metal Discs

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Globe and { Scr...	16.00	19.00	24.00	28.00	38.00	44.	53.	70.	100.	110.	165.	180.	230.
Angle { Flg...	18.00	21.00	26.00	30.00	40.00	46.	55.	73.	100.	110.	165.	180.	230.
With By-Pass, Scr. & Flg.	.....	.....	.....	.....	.....	.....	80.	110.	125.	145.	.....	230.	300.
Check { Scr.....	15.00	17.00	21.00	26.00	34.00	38.	46.	65.	.....	.....	.....	.....	.....
Valve { Flg.....	16.00	19.00	23.00	28.00	36.00	40.	48.	67.	.....	.....	.....	.....	.....
Globe, End { Scr..	7¾	9	10¼	11½	12¾	14	15	17	18	19½	21	23	26
to End { Flg..	9	10	11¾	12½	13¾	14½	15½	17	18½	20	21¾	23	26
Diam. Flg..inches	6½	7½	8¾	9	10	10½	11	12½	14	15	16	17½	20

Angle Valves, center to either opening, just half the end to end measurement of Globe Valve.

## LUNKENHEIMER EXTRA HEAVY IRON BODY GLOBE, ANGLE, CROSS, AND CHECK VALVES

For 250 Pounds Working Pressure. Iron Body, Brass Mounted

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe or Angle { Screwed.	29.00	33.00	37.00	42.	46.	53.	61.	75.	95.	114.	190.	285.
{ Flanged.	31.00	35.00	40.00	45.	50.	57.	65.	80.	100.	120.	200.	300.
Cross Valve { Screwed ....	35.00	40.00	45.00	50.	55.	63.	75.	95.	120.	145.	240.	350.
{ Flanged ....	38.00	43.00	50.00	55.	60.	68.	80.	100.	125.	150.	250.	375.
Check Valve, Hori- { Scr..	23.00	26.50	29.50	34.	37.	43.	49.	60.	76.	91.	150.	200.
zontal or Angle { Flg..	25.00	28.00	32.00	36.	40.	46.	52.	64.	80.	96.	160.	240.
Swing Check { Screwed ...	26.00	30.00	33.00	39.	42.	48.	55.	68.	.....	.....	.....	.....
{ Flanged ....	28.00	32.00	36.00	41.	45.	52.	60.	72.	.....	.....	.....	.....
Face to F. Flg. Globe & Hor. Ch...in.	9¾	11½	12½	13½	14	15	15¾	17½	19¼	21¾	25¾	28¾
C'n't'r to F. Flg. Angle & Angle Ch. "	4¾	5¾	6¾	6¾	7	7½	7¾	8¾	9¾	10¾	12¾	14
Diameter Flanges..... "	6½	7½	8¾	9	10	10½	11	12½	14	15	17½	20

By-pass extra.

Dimensions of Screwed Valves on application

These Lunkenheimer Valves can be furnished of Semi-Steel, the tensile strength of which is over 30,000 pounds. Prices on application.

## FAIRBANKS EXTRA HEAVY GLOBE AND ANGLE VALVES

For 250 Pounds Working Pressure. Iron Body, Bronze Mounted

With Renewable Copper Ring Disc

Size.....inches	2	2½	3	3½	4	5	6	7	8	10	12
Screwed.....	12.50	15.00	21.00	24.50	30.00	50.00	60.00	100.00	113.00	163.00	232.00
Flanged.....	14.70	17.50	23.25	27.00	32.50	52.50	62.50	100.00	113.00	163.00	232.00
Faceto F. Flg. Globe, in.	9	10	10¾	11¾	12½	14¼	15½	17½	18	22	23¾
C'n't'r to F. Flg. Angle "	4¾	4¾	5¾	5¾	6	7	7¾	8¾	9¾	11¾	11¾
Diam. Flg.... "	6½	7½	8¾	9	10	11	12½	14	15	17½	20

Template for drilling same as Extra Heavy Flanges, B416.

By-pass Valves quoted on application

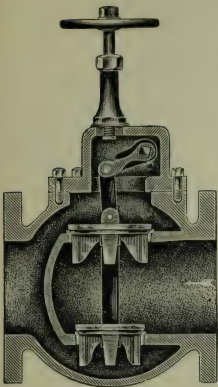


AUTOMATIC  
STOP AND CHECK  
VALVES

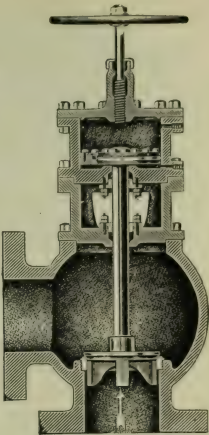
Extra Heavy for Working  
Pressure up to 250  
Pounds

DAVIS

Class A—Globe or Angle  
Class B—Angle only



B510—Class A

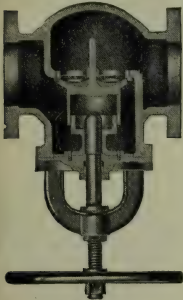


B511—Class B

Size..... inches	4	5	6	7	8	10	12
Price.....each	\$5.00	40.00	50.00	60.00	75.00	125.00	200.00
Diameter of Flanges.....inches	10	11	12½	14	15	17½	20

Class A, angle or straight, controlled by flow of steam, pressure not affecting its operation. It has a hand lever by which movement of valve may be tested at any time, also acts as indicator.

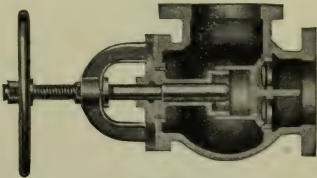
Class B valves, angle only, are to be operated by a pilot valve or a three-way cock, and can be arranged to prevent escape of steam should a break occur at any distance from boiler.



B512

ECLIPSE

Set with Wheel Down or Horizontal

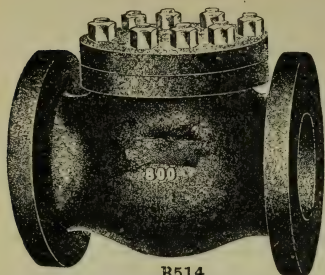


B513

Size..... inches	2½	3	3½	4	4½	5	6	7	8	9	10	12
Screwed.....each	\$35	40	50	55	65	75	90	115	140	200	230	.....
Flanged.....“	40	45	55	60	70	80	95	120	145	210	240	360

Diameter flanges same as Davis valves top of page.  
Automatic Stop and Check Valves should be placed between boiler and header. They will equalize the pressure between different boilers, remaining closed as long as the individual boiler pressure is lower than that of the header. They will open when boiler pressure equals header pressure and remain open while equal pressure exists. They automatically cut out a boiler in case a tube blows out.





B514

### **EXTRA HEAVY IRON BODY SWING CHECK VALVE**

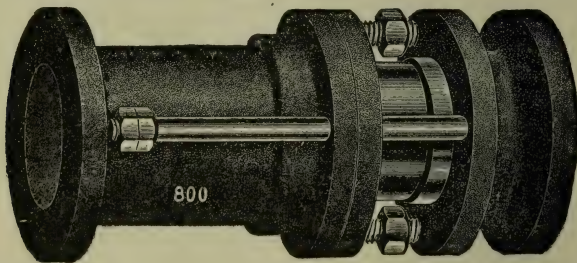
With Hard Metal Seats, Suitable for  
a Working Pressure of 250 Pounds.

Size.....Inches	2	2½	3	3½	4	4½
Screwed.....Each	26.00	33.00	37.00	42.00	46.00	56.00
Flanged....."	27.50	35.00	40.00	45.00	50.00	60.00
Size.....Inches	5	6	7	8	10	12
Screwed.....Each	61.00	75.00	95.00	114.00	190.00	.....
Flanged....."	65.00	80.00	100.00	120.00	200.00	300.00

For diameter flanges and drilling, see B416. Larger sizes quoted on application

### **EXTRA HEAVY EXPANSION JOINTS**

Iron body, with Tie Rods, Brass Sleeve, Suitable for a Working Pressure  
of 250 Pounds



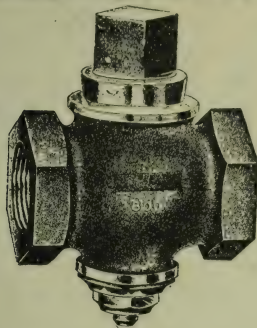
B515

Size.....Inches	4	5	6	7	8	9
Screwed.....Each	70.00	80.00	100.00	120.00	145.00	190.00
Flanged....."	75.00	85.00	105.00	125.00	150.00	200.00
Traverse.....In.	3¼	4	5	6	7	7
Diam. Flanges....."	10	11	12½	14	15	16
Length.....Screwed	18½	21½	24¾	27¾	30¾	31¾
when open }.....Flanged	19½	22¾	25½	28¾	31¼	31¾
Size.....Inches	10	12	14	15	16	18
Screwed.....Each	240.00	290.00	.....	.....	.....	.....
Flanged....."	250.00	300.00	500.00	500.00	750.00	1,000.00
Traverse.....In.	7	8	10	10	10	10
Diam. Flange....."	17½	20	22½	23½	25	.....
Length when }.....Screwed	32¾	.....	.....	.....	.....	.....
open }.....Flanged	33¾	37¾	42	42¼	45	.....

These Expansion Joints can be made with longer traverse than above at a special price. Can be furnished with Iron Sleeves and Brass Bearings at special price. Balanced Extra Heavy Expansion Joints quoted on application.

**EXTRA HEAVY BRASS STEAM COCK**

For Working Pressure up to 300 Pounds



B516

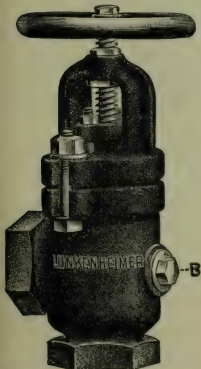
**SQUARE HEAD, FLAT HEAD, OR T-HANDLE**

Size .....	inches	$\frac{1}{8}$ or $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$
Screwed .....	each	1.30	1.50	2.00	2.85	4.00	6.75
Flanged .....	"			6.50	7.75	10.00	14.25
Size .....	inches	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Screwed .....	each	8.50	13.50	25.00	37.00	54.00	75.00
Flanged .....	"	17.25	27.00	41.00	63.00	84.00	120.00

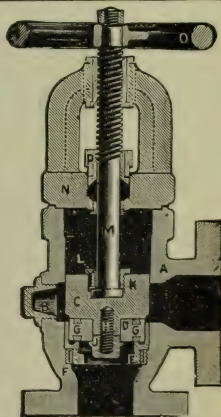
**"DURO" BLOW-OFF VALVE**

Iron Body

For High Pressure



B517

**SCREWED AND FLANGED**

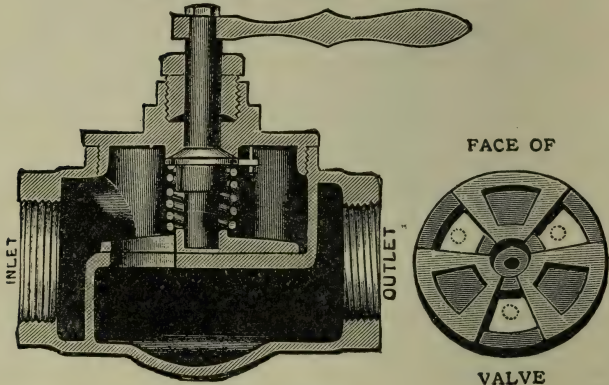
Size .....	inches	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed .....	each	7.50	10.00	13.50	18.20	27.50
Flanged .....	"	8.70	11.20	15.00	20.00	30.00
Diameter Flanges .....	inches	5	6	$6\frac{1}{2}$	$7\frac{1}{2}$	$8\frac{1}{4}$

Can be furnished Screwed one opening and Flanged other opening. See also Blow Off Valve, B658, etc., which can be furnished Extra Heavy, Screwed or Flanged with Extra Heavy diameter flanges. List price same as Standard. See Homestead Valves, B681. See Asbestos Packed Cocks, B675.

**GOLDSMITH PATENT VALVES  
STRAIGHT AND ANGLE**

**FOR THROTTLE, MAIN STOP VALVES, ETC.**

**Quick and Easy Opening and Closing**



**B518**

**STRAIGHT OR ANGLE PATTERN FOR HIGH PRESSURE**

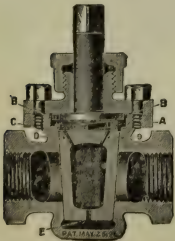
Size..... Inch		$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
<b>Brass, with</b> }	Screwed	4.00	6.00	8.00	10.00	25.00	35.00	50.00
Auxiliary	Flanged					32.50	46.00	61.00
Without	Screwed					16.00	26.00	41.00
Auxiliary	Flanged					22.50	36.00	51.00
<b>Iron Body</b> }	Screwed					15.00	22.00	3.00
With Auxiliary	Flanged					16.00	23.00	32.00
Diameter of Flanges						$6\frac{1}{2}$	$7\frac{1}{2}$	$8\frac{1}{4}$

Size..... Inch		4	5	6	7			
<b>Iron Body</b> }	Screwed	45.00	75.00	100.00	130.00			
With Auxiliary	Flanged	47.00	78.00	105.00	135.00			
Diameter of Flanges		10	11	$12\frac{1}{2}$	14			

The Goldsmith Throttle Valves are especially adapted for stationary and marine engines and large steam pumps, and can be made to work automatically and otherwise, the pressure being on top of the disc or valve, holds the valve more closely to its seat, yet the valve opens and closes easily and quickly.

The first movement of the lever moves the auxiliary valve, uncovering ports in the main valve, making about an equal pressure above and below the main valve, thereby causing the main valve, in its movements, to act as a balanced valve.

In piping always have the pressure on top of valve. On the main steam pipe a lubricator should be placed near and between the Goldsmith and the boiler, to lubricate the face of the discs and seats of the valve.



**B519**

**HOMESTEAD VALVES**

**B519**

For High Pressures, see page 109.  
For ordinary Pressure, see B681.  
See B681 for description.



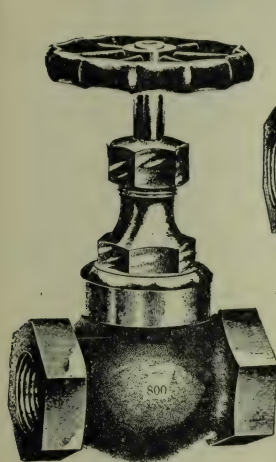
# **EXTRA HEAVY BRASS VALVES**

Tested to 800 Pounds. Suitable for 250 Pounds Working Pressure

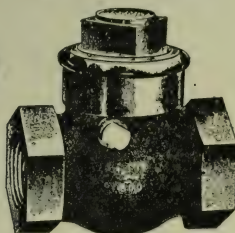
GLOBE VALVE

CHECK VALVE B532

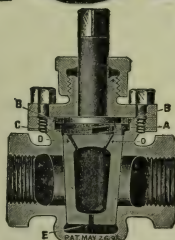
GATE VALVE



B530



HOMESTEAD VALVE B533



B531

Size .....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe, Angle { Scr.	3.75	4.25	5.50	7.75	10.00	15.00	27.50	38.50
and Gate Valve { Flg.	.....	.....	11.00	15.00	21.00	28.00	45.00	68.00
Swing Check Valve, Screwed	3.25	3.25	4.25	6.00	7.50	12.00	.....	.....
Diam. of Flgs.....in.	.....	.....	$4\frac{1}{2}$	5	6	$6\frac{1}{2}$	$7\frac{1}{2}$	$8\frac{1}{4}$

These valves are regularly made with copper discs, but they can be furnished with discs of special composition, or with other discs, as desired.

## **HOMESTEAD BRASS VALVES—B533**

Size..... inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1
For 500 Pounds Pressure .....	1.25	1.50	2.00	3.00	4.50	6.15
" 1500 " " .....	1.75	3.00	5.00	7.35	10.20	16.29
Flanged, 500 Pounds Pressure.....	.....	.....	.....	.....	.....	7.95
" 1500 " " .....	.....	.....	.....	.....	.....	22.00
3-Way, 600 " " Ser..	.....	.....	4.00	5.10	8.55	11.40
*4-Way, 600 " " .....	.....	.....	.....	9.45	11.82	21.20
Diameter of Flanges.....inches	.....	.....	.....	.....	4	$4\frac{1}{2}$
Size..... inches	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
For 500 Pounds Pressure.....	7.80	10.50	15.00	30.00	48.00	75.00
" 1500 " " .....	21.30	29.85	48.00	77.00	122.00	141.00
Flanged, 500 Pounds Pressure.....	10.05	13.65	20.00	39.00	63.00	94.00
" 1500 " " .....	28.00	39.00	63.00	100.00	159.00	177.00
3-Way, 600 " " Ser..	14.70	16.95	23.00	34.00	57.00	120.00
*4-Way, 600 " " .....	24.00	30.40	42.75	57.45	85.00	.....
Diameter of Flanges .....inches	5	6	7	$7\frac{1}{2}$	.....	.....

See B681 for Homestead Iron Valves for lower pressure.

Larger sizes quoted on application. Heavier Valves quoted on application.

\* 4-Way Valves are made All Iron, All Brass, or Iron with Brass Plug.



## JENKINS BROS.' EXTRA HEAVY BRASS VALVES

### B534

Suitable for Steam Working Pressure of 250 Pounds  
For Water or Air up to 500 Pounds

When ordering always mention kind of service to be used for so that suitable discs may be furnished.

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Globe or Angle { Screwed.....	4.00	5.00	6.50	8.25	11.00	16.00	33.00	45.00
{ Flanged.....	6.00	7.50	10.00	13.00	17.00	24.00	43.00	57.00
Check Valves { Screwed...	3.00	3.50	4.50	6.00	7.50	11.50	24.00	34.00
{ Flanged.....	5.00	6.50	8.50	11.00	14.00	20.00	34.00	46.00
Y Blow Off Valve { Screwed.....	4.50	6.00	8.00	10.00	13.00	19.00	36.00	46.00
{ Flanged.....	6.50	8.00	11.00	14.00	18.00	28.00	50.00	60.00
Diameter of Flanges.....inches	3 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	8 $\frac{1}{4}$

Extra Discs see page 120.

## LUNKENHEIMER EXTRA HEAVY BRASS VALVES

### B535

Suitable for 300 Pounds Working Pressure

Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Globe and { Scr.... .90	1.10	1.50	2.30	3.60	5.10	7.10	10.90	19.50	29.00	
Angle Valves { Flg... ..	2.50	4.10	5.80	7.60	11.00	14.00	20.00	32.00	44.00	
Cross Valve { Scr.... 1.20	1.30	1.90	2.90	4.50	6.30	8.60	13.10	23.40	34.50	
{ Flg.... ..	3.50	5.90	8.20	10.50	14.50	19.00	27.00	43.00	57.00	
Gate Valve { Scr.... 1.90	1.90	2.20	3.10	4.40	6.00	8.90	12.80	21.00	34.00	
{ Flg.... ..	3.50	4.20	5.50	7.50	10.50	14.50	19.40	29.00	44.00	
Check Valve { Scr.... .70	.70	1.00	1.70	2.80	3.90	5.50	8.90	16.20	24.30	
Hor., Ang., Vert. { Flg.... 2.20	3.70	5.20	6.80	9.40	12.70	18.10	29.00	39.10		
Swing Check { Scr.... 2.00	2.10	2.20	2.90	4.00	5.60	7.50	11.00	18.30	28.30	
{ Flg.... ..	3.40	4.00	4.90	6.60	9.50	12.50	16.80	25.30	37.00	
Diam. Flanges.....	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	6	7	7 $\frac{1}{2}$	

Larger sizes on application.

Can furnish Globe, Angle, and Cross Valves with Yoke, at special prices.

## SCOTT'S EXTRA HEAVY BRONZE METAL VALVES

### B536

With Copper, Bronze, Jenkins, or Regrinding Discs

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Globe, Angle, and Gate, Screwed..	3.75	4.25	5.50	7.75	10.00	15.00	27.50	38.50
Flanged..	12.00	15.00	18.00	24.00	30.00	50.00	60.00	
Swing Check Valve, Screwed.....	3.25	3.25	4.25	6.00	7.50	12.00		
Flanged.....			12.00	15.00	18.00	27.00	45.00	60.00
Diameter of Flanges.....inches			4 $\frac{1}{2}$	5	6	6 $\frac{1}{2}$	7 $\frac{1}{2}$	8 $\frac{1}{4}$

## CHAPMAN EXTRA HEAVY BRONZE GATE VALVES

### B537

With Solid Bronze Seats. (Chapman List No. 11.) For 250 Pounds  
Working Pressure

Size.....inches	$\frac{1}{4}$ - $\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Stationary { Screwed.....	3.50	3.85	5.20	6.35	8.00	10.30	15.20	22.75	32.50
Stem { Flanged.....	4.35	5.10	6.50	8.70	10.80	13.85	20.50	31.00	39.50
Outside Screw { Screwed.....	5.00	5.50	6.85	8.25	9.85	12.85	17.85	26.00	37.50
and Yoke { Flanged....	5.90	6.65	8.25	10.50	12.75	16.50	23.25	34.00	44.50
Diam. of Flanges.....inches	2 $\frac{1}{2}$	3	3	4	4 $\frac{1}{2}$	5	6	7	7

Can also be furnished Angle pattern, at special price.

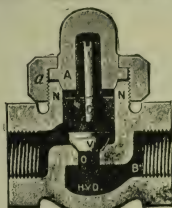
These Chapman Valves can also be furnished with Babbit Metal seats, for water, air, etc., but should not be used for steam above 325 degrees (80 pounds); for higher temperatures use the solid bronze seats.

# **HYDRAULIC VALVES**

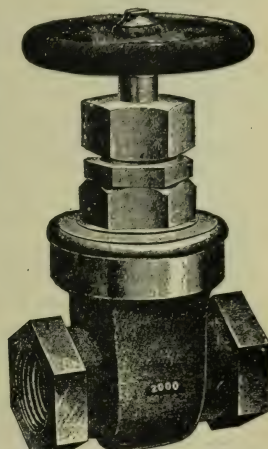
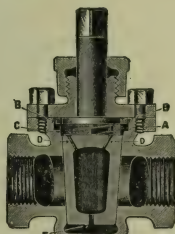
Tested to 2000 Pounds. For Working Pressure of 800 Pounds  
**GLOBE VALVE      B540—CHECK VALVE      GATE VALVE**



**B538**



**B541—HOMESTEAD VALVE**  
 See page 109.



**B539**

## **BRASS VALVES**

Tested to 2000 Pounds, for Working Pressure of 800 Pounds

Size.....inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2
Gate Valve, Screwed.....	.....	7.50	8.50	11.00	15.50	.....	.....
Globe " ".....	7.00	7.00	7.00	9.00	13.00	20.00	30.00
Check " Hor., Scr.....	6.00	6.00	6.00	8.00	11.00	17.00	25.00

These Brass Valves are specified, tested to 2000 pounds, but have often been subjected to as high as 5000 pounds without leaking.

When valves are wanted for a higher working pressure than 800 pounds, or larger sizes, please state at what working pressure they are to be used.

Prices on application.

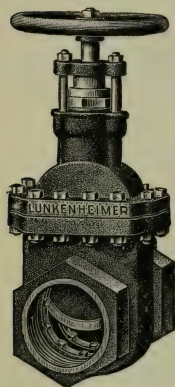
## **IRON BODY, BRASS MOUNTED VALVES.—Screwed and Flanged**

Tested to 2000 Pounds, for Working Pressure of 800 Pounds

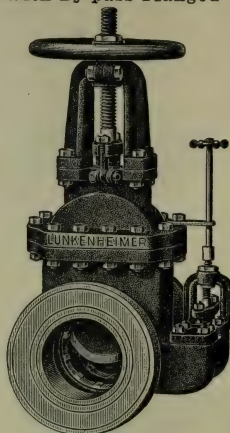
Size.....inches	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	4	5
Gate, Stationary Stem.....	16.00	19.00	35.00	50.00	70.00	95.00
Do., with Outside Screw and Yoke..	24.00	27.00	45.00	60.00	80.00	110.00
Swing Check.....	.....	.....	30.00	40.00	55.00	75.00
Diameter of Flanges.....inches	6 $\frac{1}{4}$	7 $\frac{1}{4}$	8 $\frac{3}{4}$	10	11 $\frac{1}{4}$	13 $\frac{1}{4}$
Size.....inches	6	7	8	9	10	.....
Gate, Stationary Stem.....	150.00	175.00	200.00	250.00	300.00	.....
Do., with Outside Screw and Yoke..	170.00	200.00	225.00	275.00	325.00	.....
Swing Check.....	110.00	150.00	190.00	.....	240.00	.....
Diameter of Flanges.....inches	15	16	17	18 $\frac{1}{2}$	21	.....

**Flanged Gate Valves 6 to 12-inch with By-pass** quoted on application.

These valves are specified, tested to 2000 pounds, but they have often been subjected to as high as 5000 pounds.

**STATIONARY STEM  
SCREWED**


B542

**OUTSIDE SCREW AND YOKE  
With By-pass Flanged**


B543

**SPECIAL**  
**IRON BODY,**  
**BRASS MOUNTED**  
**GATE VALVE**

With Flange Diameter same  
as Extra Heavy Fittings

**SPECIAL LUNKENHEIMER HEAVY VICTOR VALVES**

For 150 Pounds Working Pressure

Size... inches	2	2½	3	3½	4	4½	5	6	7	8	10	12
Sta'ry } ...Sc.	9.00	11.00	14.00	22.00	29.00	34.00	42.00	53.00	60.00	75.00	115.00	170.00
Stem } ...Fl.	11.70	14.00	17.50	26.00	33.00	39.00	47.50	60.00	68.00	83.00	125.00	185.00
Outs. Sc. } Sc.	12.00	15.00	19.00	30.00	38.00	45.00	53.00	66.00	75.00	94.00	142.00	210.00
and Yoke } Fl.	15.00	18.00	22.50	34.00	42.00	50.00	59.00	73.00	83.00	105.00	155.00	225.00
Add for By-pass...							5.00	6.00	6.00	8.00	12.00	17.00
Face to F. Fl.	6½	7½	8½	8½	9	9½	10½	10½	12½	13½	15½	16½
Diam. Fl'gs..	6½	7½	8¼	9	10	10½	11	12½	14	15	17½	20

Also made 9-inch Screwed and Flanged, also Flanged only 14, 15, and 16 inch.  
Template for Drilling same as Companion Flanges, Extra Heavy, see index.

**SPECIAL MEDIUM STRAIGHT-WAY GATE VALVES**

Iron Body, with Duro-Metal Trimmings, for 150 Pounds Working Pressure.  
Also Crane Ferrosteeel with Hard Metal Seats for 175 Pounds  
Working Pressure  
Screwed and Flanged.

Size..... inches	2½	3	3½	4	4½	5	6
Stationary Stem.....	12.00	15.00	18.00	20.00	23.00	25.00	30.00
Outside Screw and Yoke.....	20.00	23.00	28.00	33.00	40.00	46.00	55.00
Add for By-pass.....							25.00
Face to Face Flanged.....	8	9½	10	10½	11	11½	12
Diameter Flanges.....	7½	8¼	9	10	10½	11	12½
Size..... inches	7	8	9	10	12	14-15	16
Stationary Stem.....	45.00	55.00	80.00	90.00	125.00	190.00	275.00
Outside Screw and Yoke.....	70.00	90.00	115.00	135.00	170.00	240.00	350.00
Add for By-pass.....	30.00	35.00	35.00	35.00	40.00	50.00	50.00
Face to Face Flanged.....	12½	13½	14	15	16	17	18
Diameter Flanges.....	14	15	16	17½	20	22½-23½	25

Also made 18-inch, 20-inch, 22-inch, and 24-inch Flanged with By-pass.  
Drilling Template same as Companion Flanges, Extra Heavy, see index.



## MEDIUM IRON BODY, BRONZE MOUNTED GATES CHAPMAN

Extra Heavy Diameter Flanges, for 150 Pounds Working Steam Pressure  
Stationary Stem or Outside Screw. (List 42¼.) Renewable Bronze Seats

Size.....inches	2½	3	3½	4	4½	5	6
Stationary } Screwed.....	16.50	20.00	24.25	30.50	40.00	41.00	50.00
Stem } Flanged.....	17.50	22.00	26.50	33.00	43.00	45.00	55.00
Outside Screw } Screwed....	21.50	24.50	30.25	37.00	46.50	48.00	57.00
and Yoke } Flanged....	22.50	26.50	32.00	40.00	50.00	51.00	62.00
Size.....inches	7	8	9	10	12	14	15
Stationary } Screwed.....	60.00	72.00	86.50	105.00	148.00	.....	.....
Stem } Flanged.....	65.00	79.00	94.00	112.00	150.00	193.00	230.00
Outside Screw } Screwed....	68.00	79.50	94.50	114.00	154.00	.....	.....
and Yoke } Flanged....	73.00	86.50	102.00	122.00	157.00	198.00	245.00

Can furnish with **By-pass** at extra price.

Diameter Flanges and Drilling Template, see "Companion Flanges, Extra Heavy," index.

## FAIRBANKS HEAVY IRON BODY GATE VALVES

Screwed or Flanged for 150 Pounds Steam Working Pressure

Size.....inches	2	2½	3	3½	4	4½	5
Stationary Stem.....	10.00	14.25	18.75	24.00	27.25	33.00	35.75
Outside Screw and Yoke....	21.00	25.25	30.00	36.75	40.75	48.50	57.00
Face to Face, Flanged..ins.	7½	8½	9	10	10½	10½	11
Diameter Flanges..... "	6½	7½	8¼	9	10	10½	11
Size.....inches	6	7	8	9	10	12	.....
Stationary Stem.....	45.75	54.50	68.75	85.00	97.50	132.00	.....
Outside Screw and Yoke....	69.00	80.00	100.00	117.00	136.00	194.00	.....
Face to Face, Flanged..ins.	11½	12½	13½	15	16	17	.....
Diameter Flanges..... "	12½	14	15	16	17½	20	.....

Can be furnished with **By-pass** at extra price.

Also made Flanged 14, 16, 18, 20, and 24 inch.

Template for Drilling same as "Companion Flanges Extra Heavy," see index.

## SCOTT HEAVY CORLISS GATE VALVES

Screwed or Flanged for 150 Pounds Working Pressure

Size.....inches	2½	3	3½	4	4½	5	6
Stationary Stem.....	23.00	27.00	31.00	35.00	41.00	45.00	55.00
Outside Screw and Yoke....	31.00	35.00	41.00	48.00	58.00	66.00	80.00
Face to Face, Flanged..ins.	7¾	8¼	9¾	9¾	10¾	11	12
Diameter Flanges..... "	7¾	8¼	9	10	10¾	11	12¼
Size.....inches	7	8	9	10	12	14	16
Stationary Stem.....	72.00	87.00	120.00	145.00	200.00	300.00	400.00
Outside Screw and Yoke....	97.00	122.00	155.00	190.00	250.00	350.00	450.00
Add for By-pass.....	35.00	35.00	40.00	50.00	50.00	50.00	50.00
Face to Face, Flanged..ins.	13½	15	16	16½	17¼	18½	20
Diameter Flanges..... "	14	15	16	17¼	20	22½	25

Drilling Template same as "Companion Flanges, Extra Heavy," see index.

## LUDLOW (LIST NO. 5¼) DOUBLE GATE

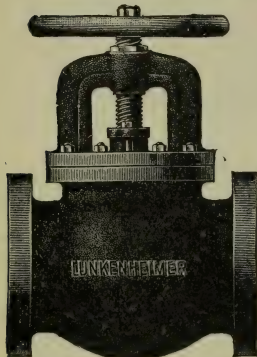
Bronze Mounted for 150 Pounds Steam Working Pressure

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Screwed.....	9.00	14.	16.	18.	21.	....	29.50	37.00	.....	54.	....	...	...
Flanged.....	9.00	15.	17.	19.	22.	26.	30.00	37.50	43.50	54.	70.	81.	101.
O. Sc. & Yoke. Add..	.....	.....	9.	10.	10.	11.	12.00	14.00	16.00	18.	20.	23.	28.
Flanged F. to F. (not By-pass)	.....	.....	8	8¼	8½	9¾	10¾	11¾	11¼	13¼	13	15	15¼
Diam. Flanges.....	.....	.....	7½	8½	9	9¼	10	11	12½	13½	15	16	19

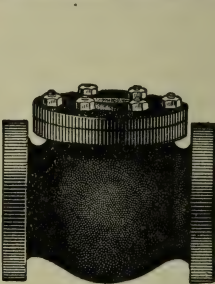


**SPECIAL IRON BODY GLOBE, ANGLE, CROSS, AND CHECK VALVES**

For 150 Pounds Steam Working Pressure

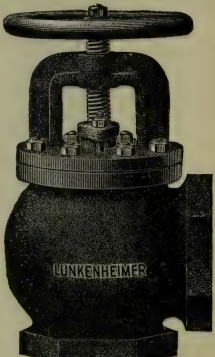


B546



Check Valve  
Horizontal or Angle

B548



B547

With Extra Heavy Diameter Flanges and Drilling, see Companion Flanges, Index.

**SPECIAL LUNKENHEIMER HEAVY VALVES**

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe or { Sc .....	7.00	9.00	12.50	15.25	19.00	24.00	27.00	37.50	63.	72.	114.	170.
Angle { Fl .....	11.00	13.50	18.00	22.00	26.00	32.00	36.00	48.00	75.	85.	130.	200.
Cross { Sc .....	8.50	11.75	16.25	20.00	23.50	30.65	35.25	47.25	78.	92.	162.	240.
Valve { Fl .....	14.50	18.50	24.50	30.00	34.00	42.00	48.00	63.00	95.	110.	190.	280.
Check { Sc .....	3.60	6.50	8.90	12.25	14.25	19.00	22.00	30.00	45.	57.	105.	155.
Valve { Fl .....	7.50	11.00	17.00	19.00	21.50	26.50	31.00	41.00	57.	69.	130.	190.
Swing { Sc .....	6.25	10.00	12.00	16.00	18.00	21.00	25.00	32.00	41.	50.	....	....
Check { Fl .....	11.00	15.50	18.00	23.00	25.50	29.50	35.00	44.00	54.	64.	....	....

**SPECIAL CRANE'S MEDIUM VALVES—B549**

Size....inches	2½	3	3½	4	4½	5	6	7	8	10	12
Globe or { Screwed....	16.00	20.00	24.00	28.00	35.00	42.00	50.00	80.	90.	135.	190.
Angle { Flanged....	18.00	23.00	28.00	33.00	40.00	47.00	55.00	85.	95.	145.	200.
Cross { Screwed.....	22.00	27.00	32.00	37.00	45.00	54.00	65.00	100.	115.	185.	260.
Valve { Flanged.....	25.00	31.00	37.00	43.00	52.00	60.00	72.00	107.	122.	195.	275.
Add for By-pass.....	.....	.....	.....	.....	.....	.....	.....	.....	30.	50.	50.
Globe, Face to Face....	10	11	12	13	13½	14½	16	17½	20	22½	25½
Angle, Center " ....	5	5½	6	6½	6¾	7¼	8	8¾	10	11¼	12¾

**SPECIAL FAIRBANKS HEAVY VALVES—B549¼**

With Copper Ring Disc

B549¼

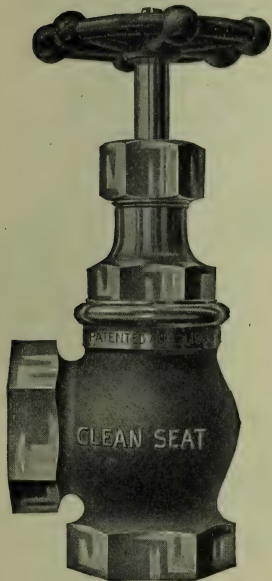
Size.....inches	2	2½	3	3½	4	5	6	7	8	10	12
Screwed .....	12.00	14.50	20.10	23.40	28.80	48.00	57.60	96.	108.	156.	222.
Flanged .....	14.10	16.80	22.20	25.80	31.20	50.40	60.00	96.	108.	156.	222.
Globe, Flg. F. to F. ....	9	10	10¾	11¾	12½	14¼	15½	17½	18	22	23¾
Angle, Flg. C. " " .....	4¼	4¾	5⅞	5¾	6	7	7¾	8¾	9¼	11¼	11¾

Brass Valves for 150 Pounds Working Pressure, see B557 to B570 and B615 to B623.

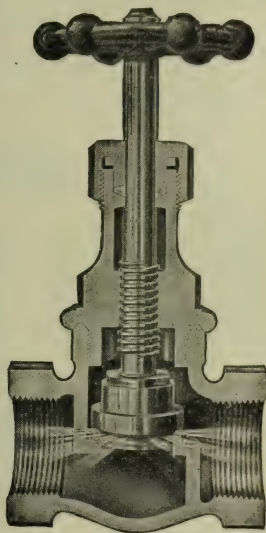
# "CLEAN SEAT" BRASS VALVES

ANGLE

GLOBE, SECTIONAL



B549½



B549¾

Positively Self-Cleaning. No Regrinding or Reseating necessary.

The positive and automatic cleaning of the seat and disc is accomplished by means of a slot or groove cut around the entire outside diameter of the disc, the bottom of the disc being hollow, with solid cast lugs on the inside. The slot is also cut through between the lugs. When the valve stem descends and the slot or groove comes flush with the seat, the steam, water, or air rushes directly across the seat of the valve, as well as the disc, just before the valve closes. It is impossible for any sediment or foreign matter to lodge on the disc or the valve seat, as the slot allows the pressure to rush through rapidly, thoroughly cleaning the seat and disc as the valve is being closed.

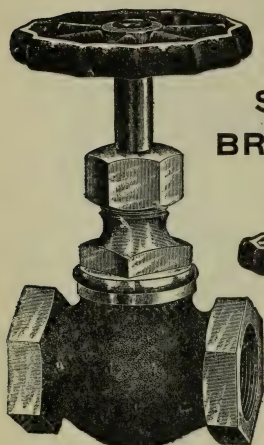
The Clean-Seat feature eliminates all possibility of wire drawing and the ruinous effects resulting therefrom.

Medium; for all pressures up to and including 200 lbs. Extra Heavy, for 500 lbs. or less. Hydraulic; for 3,000-lbs. or less.

## SCREWED

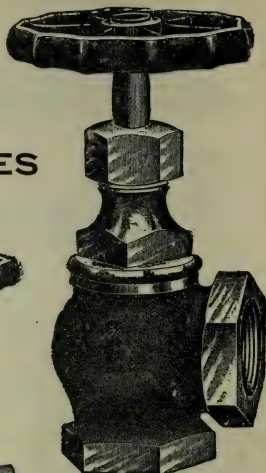
Size.....inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Medium .....	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
Extra Heavy .....	3.00	3.00	3.50	4.00	5.00	6.50	8.25	11.00	16.00	33.00	45.00
Hydraulic.....	5.00	5.00	5.00	6.00	7.50	10.00	12.50	16.50	24.00	50.00	65.00

GLOBE



B550

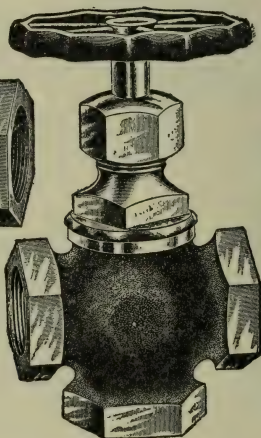
ANGLE



B551

## STANDARD BRASS VALVES

CROSS



B552

## SCREWED VALVES

Size .....	inches	$\frac{1}{8}$ - $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$
Globe and Angle.....	each	.72	.77	1.00	1.26	1.80	2.52
Cross .....	"	1.25	1.25	1.50	2.00	2.50	3.50
Size.....	inches	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Globe and Angle .....	each	3.50	5.30	10.00	14.40	26.50	36.00
Cross .....	"	5.00	8.00	16.00	24.00	....	....

## FLANGED VALVES

Size .....	inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Globe and Angle .....	each	5.00	6.75	8.50	10.50	16.00
Size .....	inches	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	....
Globe and Angle.....	each	23.00	35.00	50.00	70.00	....

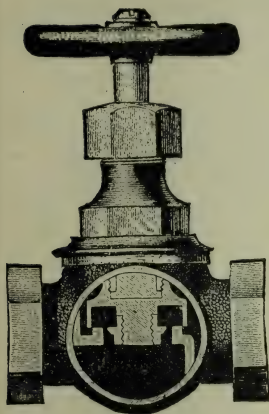
Polished Valves, Valves with Wood Wheels, with Male Threads, etc., quoted on application.

# BRASS GLOBE AND ANGLE VALVES

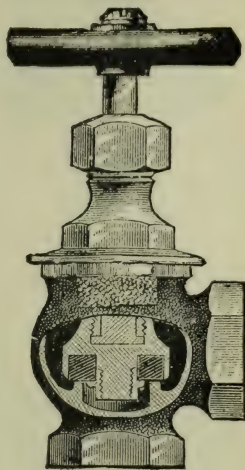
GLOBE

With Jenkins Discs

ANGLE



B553



B554

Size .....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed...each	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00

## SMITH'S METALLIC SPRING DISC

Tested to 500 Pounds



Disc for Flat Seat  
Valves—B555



Disc in Holder—B556

## PRICE LIST DISCS FOR BRASS VALVES

Size of Valve	Discs Each	DISCS AND HOLDERS COMPLETE			Size of Valve	Discs Each	DISCS AND HOLDERS COMPLETE		
		Globe Valves	Swing Check	Vertical Check			Globe Valves	Swing Check	Vertical Check
3/8	.20	.60	.....	.70	1 1/2	.52	1.60	1.88	2.50
1/2	.24	.68	.80	.84	2	.72	2.24	2.64	3.30
3/4	.30	.80	.96	1.16	2 1/2	.96	3.60	4.20	4.90
1	.36	.96	1.08	1.44	3	1.60	4.40	5.20	6.40
1 1/4	.44	1.28	1.48	1.80	.....	.....	.....	.....	.....

When ordering be sure to give name of the valve you intend using our disc in.  
Discs for Iron Valves see page B719.

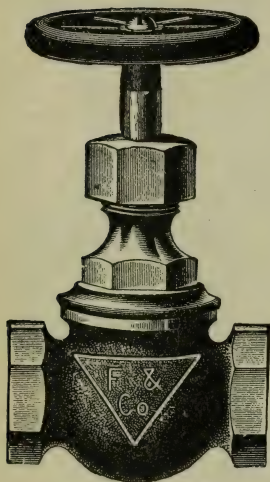


## ASBESTOS DISC BRASS VALVES

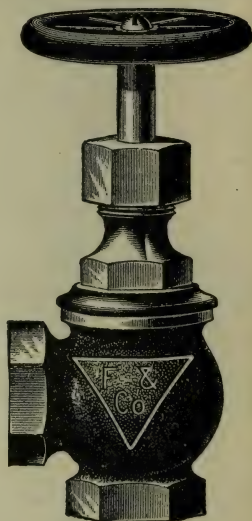
GLOBE

(Fairbank's)

ANGLE



B557



B558

### SCREWED

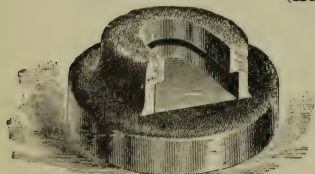
Size.....Inches	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe and Angle..each	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
Cross....."	.....	.....	2.25	2.50	3.25	4.75	6.25	9.50	20.00	30.00

Flanged Valves quoted on application.

When used for Steam pressure above 100 pounds, the special copper ring disc should be used. Valves are heavy enough for pressures up to 150 pounds.

## ASBESTOS DISCS

(Holder included)



Stem is  
included  
with  $\frac{1}{8}$  and  
 $\frac{1}{4}$ -inch

B559



SECTIONAL VIEW SHOWING  
ASBESTOS DISC IN HOLDER.

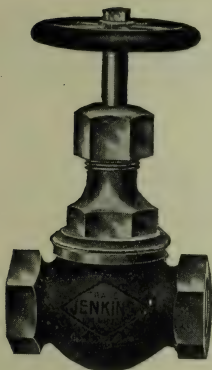
Size of Valves..Inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Net.....each	.13	.14	.07	.09	.10	.12	.18	.25	.36	.48	.60
Size.....Inches	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	10	12	14	.....
Net.....each	.75	.90	1.10	1.25	1.60	2.40	2.90	4.75	5.50	7.75	.....

Copper Ring Discs for high Steam pressure quoted on application.

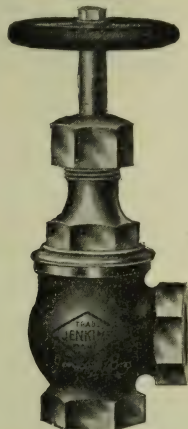
# JENKINS BROS. BRASS VALVES

GLOBE

ANGLE



B560



B561

## SCREWED VALVES

Size.....inches	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe and Angle...each	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
Cross Valves.. “	1.70	2.00	2.25	2.50	3.25	4.75	6.25	9.50	20.00	27.50

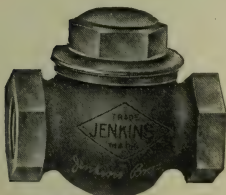
If wanted for higher than 100 pounds **steam** pressure the special metal disc is recommended. Valve is suitable for pressures up to 150 pounds.

Flanged Valves quoted on application.

Extra Discs, see B565.

HORIZONTAL CHECK

VERTICAL CHECK



B562



B563

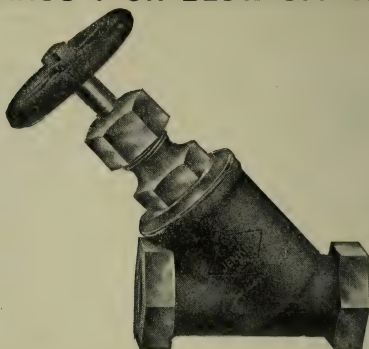
## HORIZONTAL, ANGLE AND VERTICAL

Size.....inches	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed.....each	1.10	1.20	1.30	1.90	2.60	3.60	5.00	7.50	13.50	21.00

Flanged Valves quoted on application.

Extra Discs, see B565.

## BRASS Y OR BLOW-OFF VALVE



B564

## JENKINS WITH RENEWABLE DISC

Size.....inches	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed ....each	2.00	3.00	4.00	5.00	6.50	9.25	18.00	25.00
Flanged.... "	....	....	9.00	11.00	13.00	20.00	28.00	37.00

Y Valves with Regrinding Disc and Seat furnished at special price.

## JENKINS DISCS

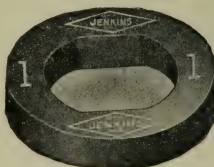
For Genuine Jenkins Valves. For Steam, Water, Oils or Acids

## JENKINS COMPOSITION DISC

For Steam up to 100 Pounds

Hard, for Steam and Hot Water

Soft, for Cold Water



B565

## JENKINS STEAM METAL DISCS

For Steam Over 100 Pounds

For Extra Heavy Pressures and Superheated Steam

Illustration shows new style disc, having holes squared on two sides. The old style disc has perfectly round hole.

## JENKINS COMPOSITION DISC

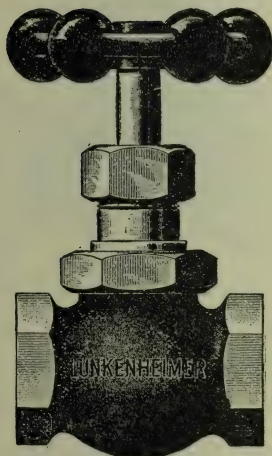
Size Valve.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$
Each.....net	.03	.04	.04	.05	.06	.09	.12	.18	.24	.33	.45	.52	.60
Size Valve.....inches	5	6	7	8	9	10	12	14	16	18	20	24	....
Each.....net	.68	.90	.98	1.20	1.60	1.75	2.25	3.00	4.00	5.00	6.00	9.00	....

## JENKINS STEAM METAL DISC

Size Valve.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$
Each.....net	.14	.14	.16	.20	.22	.28	.30	.34	.60	.85	1.35	....	....
Size Valve.....inches	4	$4\frac{1}{2}$	5	6	7	8	9	10	12	14	....	....	....
Each.....net	1.60	2.00	2.30	2.60	3.70	4.00	5.25	5.60	7.30	9.80	....	....	....

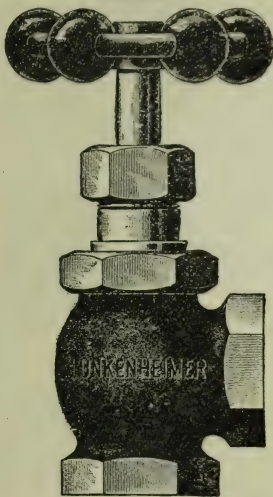
# REGRINDING BRASS VALVES

GLOBE



B566

ANGLE



B567

## LUNKENHEIMER OR WILLIAMS LIST—SCREWED

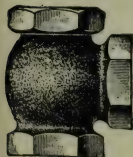
Size.....inches	$\frac{1}{8}$ — $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe and Angle...each	.70	.85	1.15	1.45	2.00	2.80	3.90	6.20	12.00	16.50
Cross Valves.....“	1.00	1.00	1.50	2.00	2.70	3.50	5.10	8.00	16.00	24.00

Flanged valves quoted on application.

These Regrinding Valves suitable for steam working pressure of 200 pounds.

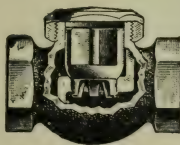
# REGRINDING BRASS CHECK VALVES

ANGLE



B568

HORIZONTAL



B569

VERTICAL



B570

## LUNKENHEIMER OR WILLIAMS LIST

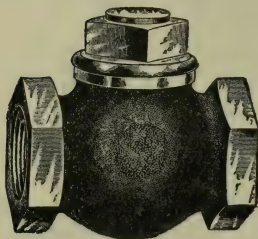
Size.....inches	$\frac{1}{8}$ — $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed.....each	.50	.60	.85	1.15	1.55	2.30	3.25	5.20	10.00	14.00

These Regrinding Valves suitable for steam working pressure up to 200 pounds.



## STANDARD BRASS CHECK VALVES

HORIZONTAL



B571

HORIZONTAL  
With Drip Cock

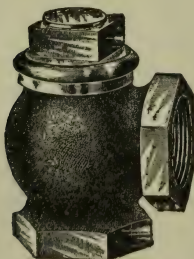
B572

### B571 SCREWED

Size.....inches	$\frac{1}{8}$ - $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	.65	.70	.90	1.15	1.60	2.25	3.15	4.75	9.00	13.00

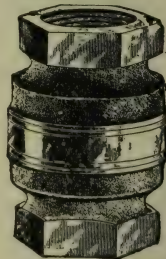
B572. NOTE.— We will tap any size Check Valve and fit with Drip Cock. Add to above list price \$1.00

ANGLE



B573

VERTICAL



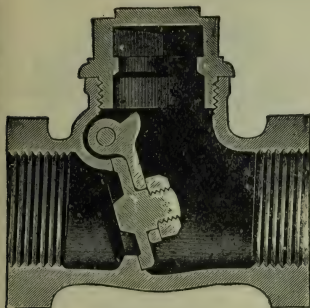
B574

### SCREWED

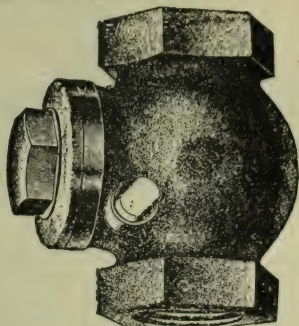
Size.....inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30

Flanged Valves quoted on application.

**STANDARD BRASS SWING CHECK VALVES**



Horizontal



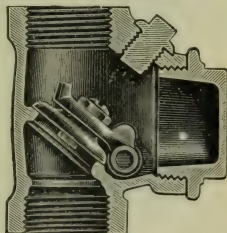
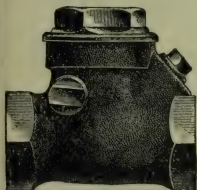
Vertical

B575

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed.....each	2.15	2.25	2.75	3.50	4.25	5.50	7.50	15.00	22.00

Drip Cocks can be tapped into Swing Check Valves if desired, extra.

**PRATT & CADY (FAIRBANKS) BRASS SWING CHECK VALVES**



B576

Horizontal, Vertical, or Angle

Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed.....ea.	1.25	1.30	1.50	1.75	2.25	3.25	4.25	6.25	12.00	20.00
Fig., Hor. & Vert. "	....	....	....	....	6.25	7.85	10.25	15.50	25.00	32.50

If with Asbestos or Leather Discs, special price.

**JENKINS BROS.' SWING CHECK VALVES—B577**  
(Not Illustrated.)

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed.....each	1.20	1.30	1.90	2.60	3.60	5.00	7.50	14.00	21.00

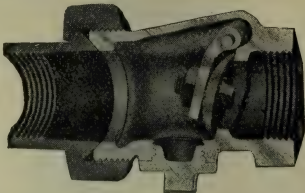
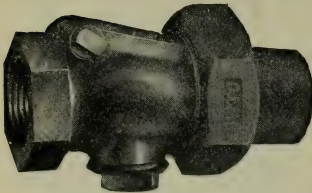
**REGRINDING SWING CHECK VALVES—(Not Illustrated)—B578**  
Lunkenheimer or Williams List

Size.....inches	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed.....each	1.25	1.30	1.75	2.25	3.25	4.25	6.25	11.50	16.00
Flanged....."	2.60	2.90	3.60	4.90	7.20	9.20	12.30	18.50	26.80

For pressure up to 150 pounds.

KEWANEE UNION SWING CHECK VALVE

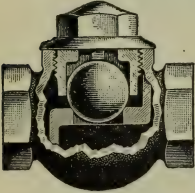
BRASS VALVE WITH IRON UNION



B579

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Black.....each	2.15	2.25	2.75	3.50	4.25	5.50	7.50	15.00	22.00
Galvanized.....“	2.25	2.45	3.00	3.85	4.65	6.25	8.25	.....	.....

Also made in Male Union at same list.



Horizontal

B580

BRASS BALL  
CHECK VALVES



Vertical

B581

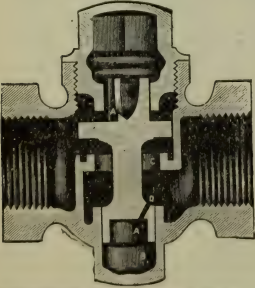
Size....inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed..each	.85	.95	1.10	1.60	2.30	3.10	4.00	6.20	9.40	18.00	25.00

Horizontal may be fitted with drain cock, if desired.

BRASS BALLS. (Sizes above 1½ inches are cast hollow.) B582

Diam. Ball..inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	$3\frac{1}{4}$	$3\frac{1}{2}$	4
Price.....each	.20	.30	.55	.70	.90	1.25	2.10	2.60	3.30	4.70	5.30	6.10	7.00	8.00	10.50

Larger sizes quoted on application.



FLOWERS NOISELESS  
WATER CUSHION CHECK VALVE

For 100 Pounds Working Pressure

Special Valves for 150 Pounds, to Order

B583

BRASS SCREWED

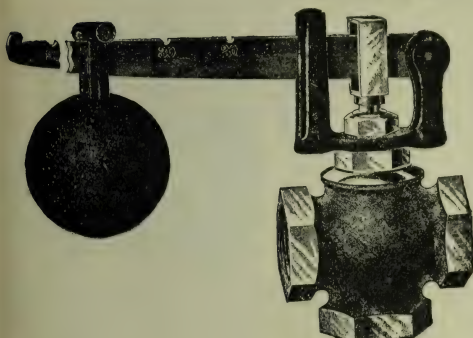
Inches ....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each .....	1.30	1.75	2.25	3.25	4.25	6.25	11.50	16.00

Size.....inches	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Iron Body, Screwed .....	10.00	12.00	16.00	18.00	25.00	32.00

# BRASS SAFETY VALVE

WITH BALL AND LEVER

BRASS  
VACUUM VALVE



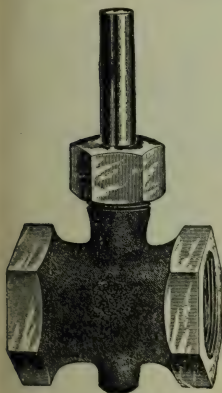
B584

B585

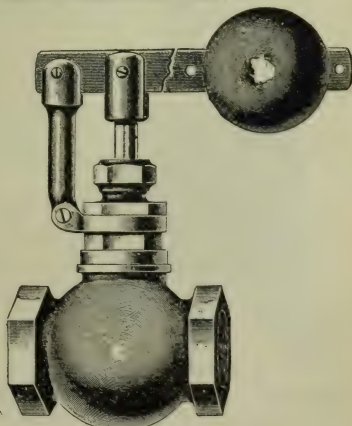
Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Safety.....each	2.20	2.50	3.25	3.90	4.70	7.15	9.00	12.50	22.50	33.50
Vacuum....."	.....	.....	1.50	2.00	2.50	3.00	.....	.....	.....	.....

BRASS  
BUTTERFLY VALVE

BRASS BALANCED VALVE



B586



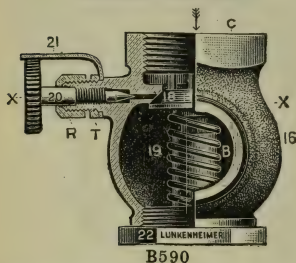
B587

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Butterfly Valve.....each	.....	3.10	4.40	5.65	6.75	10.00	13.75	21.00
Balanced Valve....."	5.50	6.50	8.00	8.75	9.50	13.00	16.50	25.00

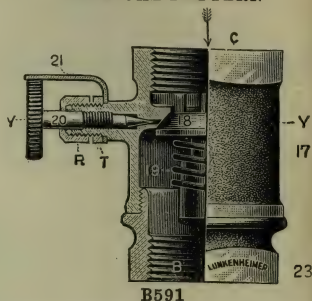


# GENERATOR VALVES FOR GASOLINE ENGINES

## ANGLE PATTERN



## VERTICAL PATTERN

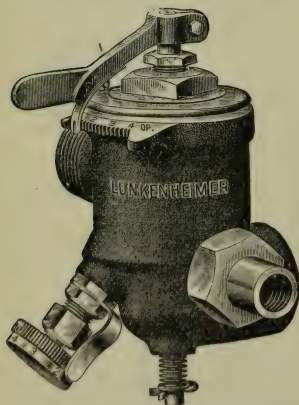


Size.....	Inch	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Price.....	each	2.60	3.30	4.00	4.80	6.00	7.50
For Cylinder.....	Inch	2	$3\frac{1}{2}$	$4\frac{1}{2}$	$5\frac{1}{2}$	7	8

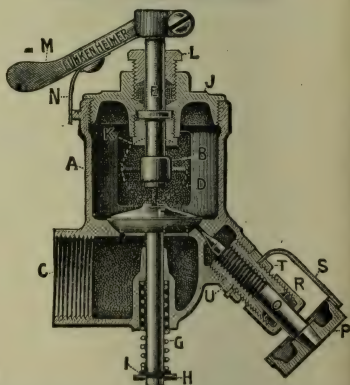
The above proportions are based on a piston travel of not more than 600 feet per minute. For higher speeds than this, the Generator Valve should be the next size larger than shown above.

## LUNKENHEIMER "NONPAREIL" GENERATOR VALVES (Patent applied for.)

### RIGHT HAND PATTERN TYPE A



### LEFT HAND PATTERN



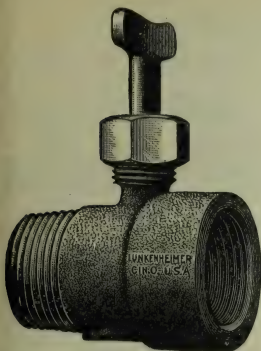
### B592

Size.....	Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Improved Type A Generator Valve .....	each	5.00	6.25	7.50	9.00	11.20	27.50
Type B (wheel top, instead of lever) .....	"	4.25	5.25	6.25	7.75	9.40	25.00
Type C.....	"	5.40	6.75	8.50	10.00	12.50	30.00
Suitable for Cylinder.....	Diameter, inches	2	$3\frac{1}{2}$	$4\frac{1}{2}$	$5\frac{1}{2}$	7	8

The above proportions are based on a piston travel of not more than 600 feet per minute. For higher speeds than this, the generator valve should be the next size larger than specified. Type C is similar to Type B, having small brass wheel thumb screw top; it also has a butterfly valve in outlet passage.

# GASOLINE ENGINE GENERATOR VALVE THROTTLE

B593



Size....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Price.....each	1.90	2.10	2.70	3.30	4.00	5.00

This valve is placed between the generator valve and the engine and is used for regulating the speed of the engine. While we have found that our device for controlling the lift of the disc is the best method for regulating the supply of mixture to the cylinder, nevertheless the throttle valve alone is preferred by some for this purpose. It is, however, a very valuable addition in connection with our generator

valves, B590 and B591, which are constructed without the device for regulating the lift of the disc. The throttle is made of brass, neatly finished, and the disc being balanced will remain at any degree of opening.

## GASOLINE STRAINERS FOR GENERATOR VALVES

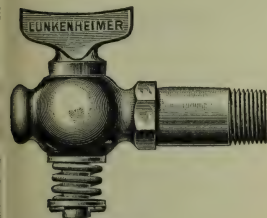
Horizontal or Angle with Clean-out Screw (not illustrated), pipe size,  $\frac{1}{8}$ -inch, \$.90;  $\frac{1}{4}$ -inch, \$1.00 each;  $\frac{3}{8}$ -inch, \$1.20;  $\frac{1}{2}$ -inch, \$1.55. If with Drain Cock add 55c.

## GASOLINE CYLINDER RELIEF COCKS

Short Shank, Tee Handle

Angle Shank Lever  
Handle. Left Hand  
Pattern. With  
Priming Cup

Forked Handle



B594



B595



B596

### RELIEF COCKS

Size .....	inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Lever Handle, Long Shank (not illustrated).....each		1.30	1.70	2.30	3.40	4.40
Tee Handle, Short Shank B594 .....		1.10	1.50	2.10	3.20	4.20

### COMBINED PRIMING CUP AND RELIEF COCK

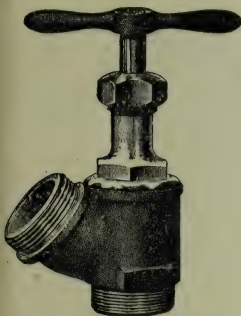
Size .....	number	00	0	1	2	3	4
Pipe size .....	inch	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$
B595 Angle shank and Lever Handle .....	each	85	1.00	1.15	1.35	1.60	1.90
B596 Straight shank, with Forked Lever..	"	95	1.15	1.30	1.50	1.75	2.00
" " " Tee Handle .....	"	70	.80	.90	1.00	1.30	1.50
" " " Lever Handle..	"	75	.85	.95	1.10	1.40	1.65



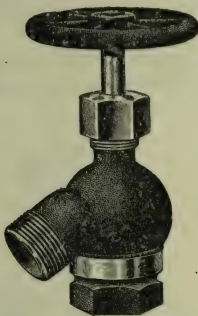
# BRASS HOSE VALVES

## STANDARD PATTERN

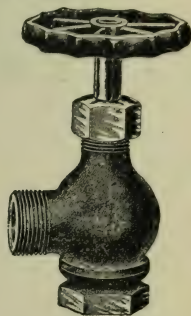
## GARDEN HOSE VALVES



B605



B606



B607

Size.....Inches		$\frac{1}{2}$ & $\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
B605	Rough Brass.....Each		3.15	3.70	4.75	7.00	8.50
	Rough Nickeled.....“		3.65	4.30	5.50	8.00	9.75
B606 and 607, Rough Brass....“		1.65	2.20	3.40	4.75	7.00	12.00

When ordering state what thread is wanted on outlet. As regularly made valves have standard hose thread. Can be made any thread desired.



## BRASS GATE VALVE

With Hose Thread and

Cap and Chain

B609

Size.....Inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Rough Body, Plain, with Brass Cap and Chain, Each	3.75	4.85	6.50	9.25	16.50
Rough Body, Plain, without Brass Cap and Chain “	2.50	3.50	5.00	7.50	14.00
Fin. and Nickeled, Brass Cap, Wheel and Chain “	7.35	9.35	11.00	16.00	26.00

Valves can be furnished with Automatic Drip, or with Pet Cock, at special net prices.

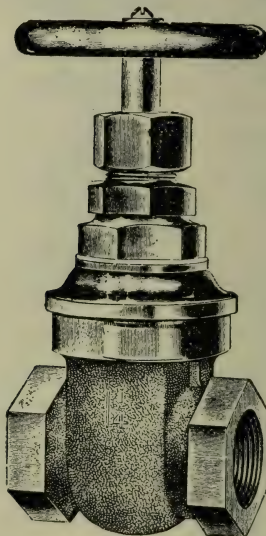
When ordering send hose coupling, so that valve can be threaded to suit.

These valves have female iron pipe thread and male hose thread, and are always made to order to suit hose thread.



# STANDARD STRAIGHT WAY GATE VALVES

Brass



B610

## PRICE EACH

Size.....inches	$\frac{1}{4}$ - $\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed.....	1.25	1.30	1.75	2.50	3.50	5.00	7.50	14.00	20.00
Flanged.....	....	....	....	5.00	7.00	10.00	14.00	24.00	34.00
Diam. Flgs...in.	....	....	....	....	....	....	6	7	$7\frac{1}{2}$

Larger sizes quoted on application.

Standard Brass Gate Valves are recommended for pressures up to 100 pounds; they are often satisfactory on considerably higher pressure. It is not only a question of the valve standing the higher pressure, but also standing the strain of expansion, contraction, weight of piping and settling, also the cutting effect of the high pressure steam on the discs and seats.

**Valves with Finished Brass Wheels** made to order only.

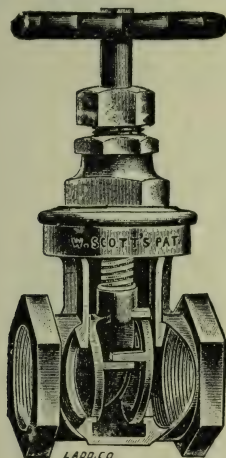
Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Rough Body, Screwed.....	2.70	3.25	4.05	5.50	7.10	10.30	18.00	25.00
Finished all over, Screwed	3.65	4.25	5.50	7.25	8.75	13.25	22.00	30.00
"    and Plated.    "	3.95	4.60	5.90	7.70	9.25	14.00	23.00	31.50

**Wood Wheel Valves and Valves with Unions** come under the head of Radiator Valves.

# SCOTT'S BRASS STRAIGHT WAY GATE VALVES

WEDGE  
DOUBLE DISC

STATIONARY  
STEM



B612

Size..inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed..ea.	1.25	1.25	1.30	1.75	2.50	3.50	5.00	7.50	14.00	20.00
Flanged..“	.....	.....	.....	.....	.....	9.00	12.00	14.00	24.00	34.00

Valves with Unions, also larger sizes, special.

## SPECIAL BRASS VALVES

SLIDING STEM AND LEVER GATE

SERVICE GATE



B613

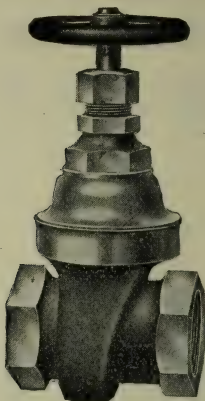


B614

Size..... inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
B613 } Screwed ..... each	3.25	4.50	6.00	8.00	12.00	22.00	30.00
} Flanged ..... “	.....	.....	.....	.....	18.50	32.00	45.00

Service Gate, at special net prices. State whether wanted with or without waste.

## SPECIAL BRASS GATE VALVES



## JENKINS BRASS GATE VALVES—B615

Stationary Stem. Renewable Disc Ring

Size .....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed .....each	1.90	2.00	2.50	3.25	4.25	5.25	7.50	14.00	20.00
Flanged ..... "	3.50	4.50	6.00	7.50	10.00	14.00	21.00	28.00	
Disc Rings, net..... "		.10	.10	.10	.10	.10	.12	.30	.40
Diam. Flanges..... inches	3	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	$7\frac{1}{2}$

Jenkins Gate Valves are also made with Rising Stem.

## FAIRBANKS BRASS GATE VALVES—B616

Stationary Stem. Asbestos Seat Rings

Size .....inches	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed .....each	1.50	1.65	2.20	2.80	4.00	5.30	7.80	17.00	23.00
Flanged ..... "		4.65	5.65	7.50	9.35	14.00	16.00	26.50	35.75
Seat Rings, net..... "	.08	.08	.10	.14	.16	.20	.30	.70	.90

Larger sizes quoted on application.

Fairbanks Valves are also made with Rising Stem.

## CHAPMAN BRONZE GATE VALVES—B617

Stationary Stem. Solid Bronze Seats

Chapman's List No. 1, for Steam or Water up to 125 Pounds Pressure

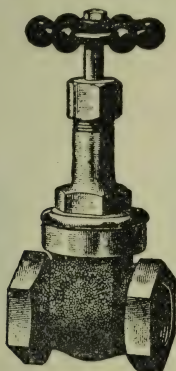
Size.....inches	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Screwed ...each	1.25	1.35	1.65	2.30	2.80	3.75	5.75	9.65	.....	.....	.....
Flanged ... "	.....	.....	2.75	3.85	4.65	6.75	9.50	15.30	.....	.....	.....
With Sliding Stem and Lever, add .....	.70	.70	.70	.70	.75	1.00	1.00	1.10	.....	.....	.....
Diam. Flgs. ... in.	.....	.....	.....	.....	$4\frac{1}{2}$	5	6	7	7	$8\frac{1}{2}$	9

(List No. 4) Valves, similar to No. 1, can be furnished Solid Bronze or with Babbit Metal seats. Sizes  $\frac{1}{4}$ -inch to 4-inch, and run from 10% to 20% higher price than No. 1. Babbit Metal seats are not suitable for over 325 degrees (or 80 pounds) steam.

# BRASS DOUBLE GATE VALVES

For pressure to 150 pounds

With Rising Stem



B625

## LUNKERHEIMER OR WILLIAMS LIST

Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed.....each	1.10	1.10	1.30	1.90	2.50	3.50	5.00	7.50	14.00	20.00
Flanged....."	.....	2.60	3.00	4.00	5.30	7.70	10.50	14.00	21.00	32.00

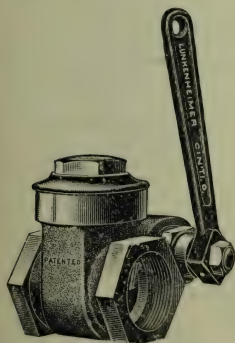
# BRASS LEVER THROTTLE VALVES

LEVER THROTTLE VALVE

HANDY GATE VALVE

For not Over 175 pounds Working Pressure

For not Over 75 pounds Working Pressure



B626



B627

## SCREWED

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
Lever Throttle.....each	.....	3.00	4.00	5.00	7.00	10.00	19.00	.....	.....
Handy Gate....."	1.60	1.80	2.50	3.50	5.00	7.50	13.50	19.00	60.00

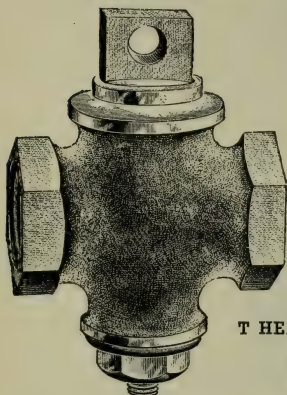
The Throttle Valve is especially adapted as a throttle for traction and hoisting engines, saw mills, steam hammers, pile drivers, etc.

See also Iron Valves, B780 & B781



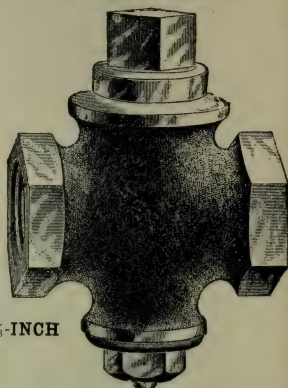
## STANDARD BRASS STEAM COCKS

FLAT HEAD

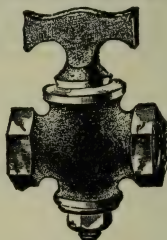


B650

SQUARE HEAD



B651

T HEAD,  $\frac{1}{8}$ ,  $\frac{1}{4}$  and  $\frac{3}{8}$  INCH

B652

Size ...inches	$\frac{1}{8}$ - $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Flat, Square or T head..... each	.85	1.00	1.25	1.70	2.35	3.70	4.85	7.30	14.50	22.50
Extra, if with check pin. each	.15	.15	.15	.20	.20	.25	.30	.35	.50	.75

Cocks 1 inch and larger, with flanged ends, at special price.

Cocks  $3\frac{1}{2}$  inch to 6 inch made to order at special price.

## MALLEABLE IRON WRENCHES

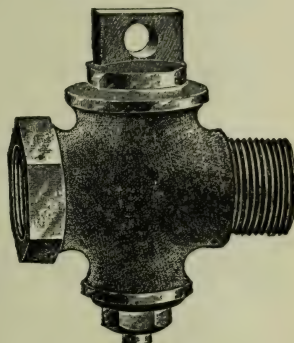


B653

For Square or Flat Head Cocks

Size of Cock . . . . .inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each . . . . .	10	10	10	15	25	40	40	50

When ordering state dimensions of head.

**SPECIAL BRASS STEAM COCKS****THREE-WAY WITH CHECK PIN****B654****MALE AND FEMALE****B655**

Size..... inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Three-Way.....	.....	2.50	3.00	3.75	5.75	7.15	11.00	18.75	26.00
Male and Female.....	1.45	2.00	2.50	3.00	5.35	6.75	9.85	17.50	25.75

Larger Sizes, to order at special price.

**SPECIAL EXTRA HEAVY BRASS, NATURAL GAS COCK**

Intended for very high pressure, Natural Gas Lines, or Wells.

For ordinary Natural or Artificial Gas Service Cocks, see next page.

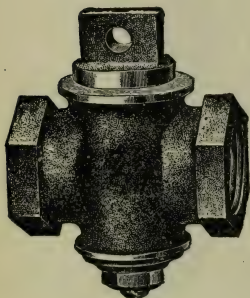
**B656**

Size..... inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each.....	.65	1.05	1.45	2.15	3.40	4.55	6.85

## BRASS GAS SERVICE COCKS

For Natural or Artificial Gas

FLAT HEAD



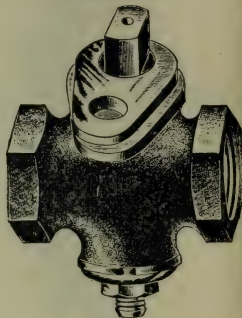
B660

T HEAD



B661

LOCK HEAD



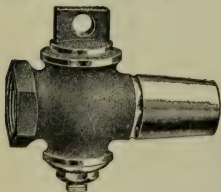
B662

Size.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Flat Head.....each	.75	.85	.95	1.15	1.50	2.25	3.10	5.00
Tee Handle.... "	.75	.85	....	....	....	....	....	....
Lock Head.... "	...	...	1.30	1.60	2.10	3.50	5.00	7.00

For Gas Stove Cocks see Gas Goods farther along in book.

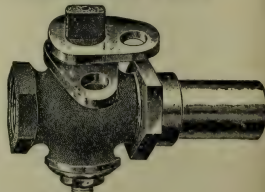
## GAS METER COCKS

FLAT HEAD, PLAIN



B663

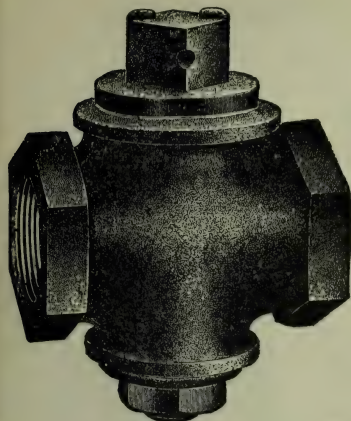
LOCK HEAD, WITH UNION



B664

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
B663 Plain Head.....each	1.30	1.40	1.95	3.00	4.25	6.00
" " with Union.. "	1.40	1.55	2.20	3.40	5.00	7.00
B664 Lock " " "	1.50	1.80	2.50	4.00	5.50	8.00
" " without " "	1.40	1.75	2.30	3.85	5.50	7.75

For Gas Stove Cocks see Gas Goods farther along in book.



B670

Screwed

## STANDARD IRON COCKS

Square Head regularly in Stock.

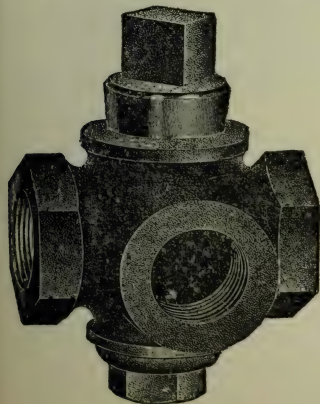
Can be furnished in Flat Head if desired.

(Flanged Cocks quoted on application.)

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
All Iron.....each	.90	1.05	1.30	1.60	1.95	2.70
" " with Brass Washers.... "	1.00	1.20	1.55	1.95	2.35	3.20
Iron, with Brass Plug..... "	1.30	1.60	1.90	2.65	3.75	5.25
Size.....inches	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
All Iron.....each	4.40	6.75	12.00	15.50	32.00	45.00
" " with Brass Washers.... "	5.15	7.75	14.00	19.00	38.00	53.00
Iron, with Brass Plug..... "	8.75	13.00	27.50	36.50	67.00	94.00

<b>Oil Country Cocks</b> , a special heavy Flat Head Iron Cock with Brass Washer, not illustrated.....each	1-inch	2-inch
	2.00	4.50

Extra Heavy Iron Cocks quoted on application.



B671

## STANDARD IRON THREE WAY COCKS

Screwed

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
All Iron.....	1.65	1.80	2.05	2.65	3.65
With Brass Washer	1.80	2.05	2.40	3.05	4.15
" " Plug..	2.20	2.40	3.10	4.50	6.25
Size.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	....
All Iron.....	5.35	7.50	14.00	19.00	....
With Brass Washer	6.10	8.50	16.00	22.50	....
" " Plug..	9.75	13.75	30.00	40.00	....

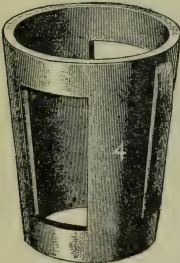


ASBESTOS PACKED IRON COCKS

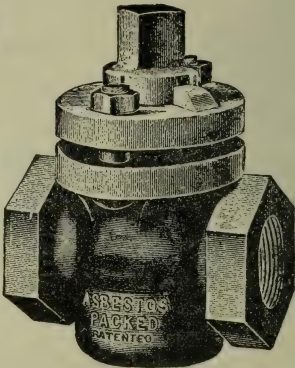
Asbestos Ring



Asbestos Bushing

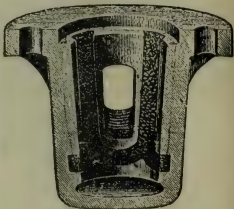


For Regular Renewable Pattern Cocks, No. 1



B 675  
SCREWED

Sectional View of Body of No. 0, 2 and 3



"U" Packed Cocks, suitable for use where pressure is over 90 pounds

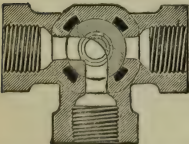
Sizes.....inches	1/8 & 1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
No. 1 or 0 Standard.....ea.	1.30	1.45	1.60	2.10	2.50	3.50	4.75	7.00	12.00	18.00
No. 2 Heavy .....	1.50	1.75	2.00	2.50	3.00	4.25	5.75	8.50	14.50	21.50
No. 3 Extra Heavy....."	.....	.....	2.40	3.00	3.50	5.00	6.75	10.00	17.00	26.00
Bushings, Net....."	.....	.....	.50	.75	1.00	1.40	1.90	2.40	2.90	3.50
Rings, Net....."	.....	.....	.08	.11	.17	.20	.25	.34	.50	.80
*Repacking U Cock, Net...	.....	.....	.90	.95	1.00	1.55	1.95	3.15	5.70	7.80

\*Also add express or freight to and from the factory, as these U pattern cocks can only be repacked by returning to the factory in Connecticut.

**Pressures**, Bushed pattern, No. 1 intended for 80 pounds or less, but many are in use on considerably higher pressures. The U pattern Standard, No. 0 for 100 pounds. Heavy, No. 2 for 150 pounds, and Extra Heavy, No. 3 for 250 pounds.

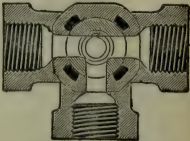
Flanged also Angle Cocks furnished from factory.

No. 1. Bushed Cocks with taper plug and renewable bushing can be repacked without removing from the line



"B" PATTERN  
3-Way Iron Cock, "U" Packed  
For Factory Shipment Only

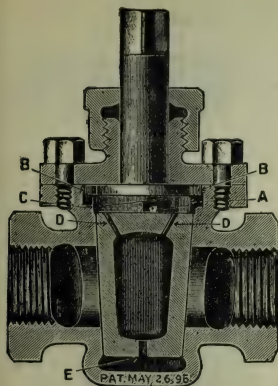
B 679                      B 680



Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5
No. 4 or 5 each	2.85	3.15	4.40	5.95	8.75	15.00	22.50	33.75	37.50	56.25	75.00

No. 4. Two Openings in Plug. Side port and either line port can be connected; all three ports can be closed.

No. 5. Three Openings in Plug. All three ports can be open; any two can be open and the third closed.



## HOMESTEAD VALVE

This valve is so constructed that when it is closed it is at the same time forced firmly to its seat. A quarter of a turn in the direction for closing it causes the cam to rise and take a bearing on the upper surface of the chamber. A slight motion in the other direction immediately releases the cam and the plug turns easily.

For steam, compressed air and hydraulic.

The 150 Pound Pressure Valve is an unexcelled

### BLOW-OFF COCK

All Iron, All Brass, and Iron with Brass Plug, at varying discount.

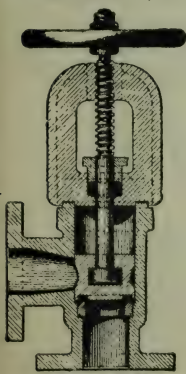
B681

### FOR \*150 POUNDS PRESSURE

Size.....inches	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed .....	1.00	1.20	1.65	2.10	3.00	4.50	6.30	10.95	18.	30.
Flanged .....	.....	.....	.....	.....	3.90	5.85	8.10	14.25	24.	39.
3-Way Screwed.....	.....	2.25	2.40	4.65	6.00	8.10	10.80	16.20	27.	38.
Locking Cock.....	.....	.....	1.35	1.75	2.30	4.00	5.25	7.50	11.	18.
Diam. of Flgs.....inches	.....	.....	.....	.....	4	$4\frac{1}{2}$	5	6	7	8

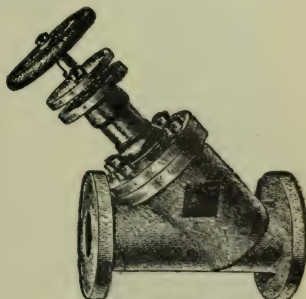
Locking Cocks (not illustrated) are all iron. The 3-Way Valve is for 200 pounds pressure.

\*Homestead Valves for Higher Pressure see page 109.



B685 ANGLE

### IRON BODY BLOW-OFF VALVES



B686 JENKINS Y VALVE

Size .....	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6	8
B685 Angle, Ser. or Fig. ea	15.00	20.00	30.00	.....	.....	.....	.....	.....
B686 Y { Screwed ..	11.00	15.00	20.00	28.00	35.00	59.00	70.00	115.00
{ Flanged ..	13.00	18.00	23.00	31.00	38.00	64.00	70.00	115.00

B685 Angle Valve wears well and gives splendid satisfaction. It can be furnished with Extra Heavy diameter Flanges if desired. Disc can be renewed in a few minutes. Also made  $2\frac{1}{4}$ , and  $1\frac{1}{2}$  inch Brass Angle and Globe.

B685 is also made Extra Heavy, Angle or Straight, use above list price.

B686. The Y valve has no pocket or anything to obstruct the passage. It shuts against the pressure. Internal arrangements are same as Jenkins Bros' valves.

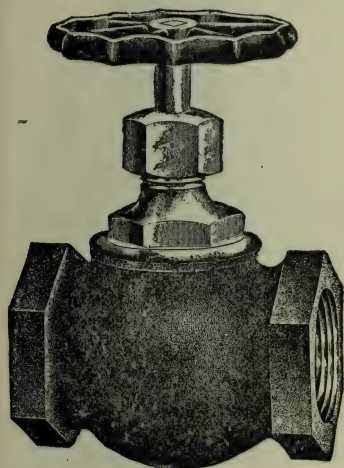




STANDARD IRON BODY BRASS MOUNTED  
GLOBE AND ANGLE VALVES

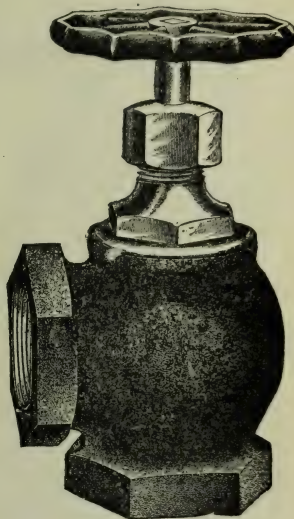
Plain Pattern

GLOBE



B687

ANGLE



B688

SCREWED AND FLANGED

Size.....inches	2	2½	3
Screwed .....each	5.40	7.35	9.80
Flanged ..... “	7.00	9.00	12.50
Diameter Flanges .....inches	6	7	7½

Smaller sizes. special from factory.

Template for drilling, same as Companion Flanges, Standard. See index.

GLOBE AND ANGLE VALVES

With Jenkins Disc

B689, B689½

Size.....inches	2	2½	3
Screwed .....each	7.25	11.00	16.00
Flanged ..... “	8.50	13.00	18.00

Diameter of flanges same as above.



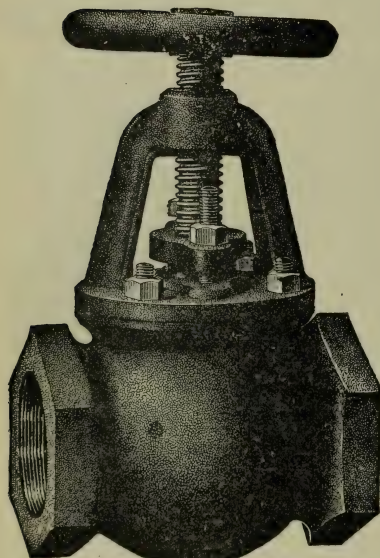
## STANDARD IRON BODY BRASS MOUNTED GLOBE AND ANGLE VALVES

Yoked Pattern

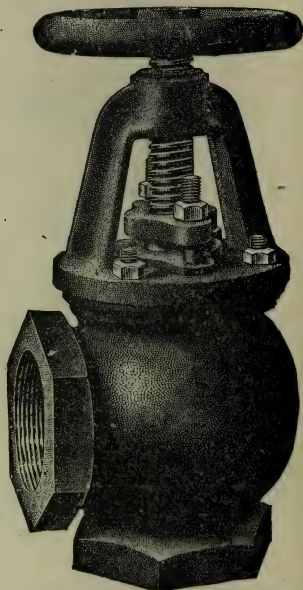
Screwed Ends

ANGLE

GLOBE



B690



B691

### SCREWED

Size.....Inches	2	2½	3	3½	4	4½
Price.....Each	7.00	9.00	12.50	15.25	19.00	24.00
Size.....Inches	5	6	7	8	10	12
Price.....Each	27.00	37.50	63.00	72.00	114.00	170.00

### SCREWED GLOBE AND ANGLE VALVES YOKED

With Jenkins Disc

B0693 and B0694

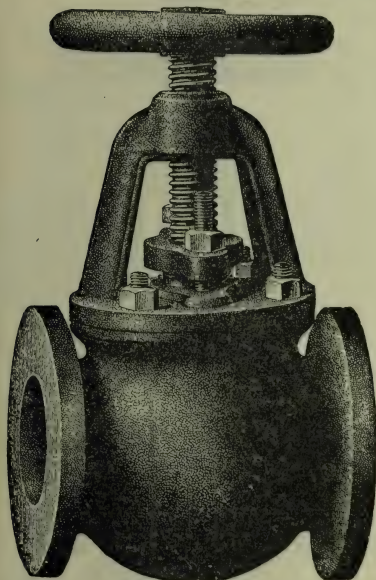
Size.....Inches	2	2½	3	3½	4	4½
Price.....Each	12.00	16.75	19.50	24.00	32.00	
Size.....Inches	5	6	7	8	10	12
Price.....Each	40.00	48.00	80.00	90.00	130.00	185.00

**STANDARD IRON BODY BRASS MOUNTED  
GLOBE AND ANGLE VALVES**

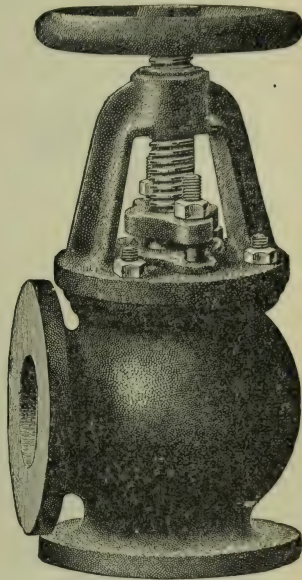
Yoked Pattern. Flanged Ends

**GLOBE**

**ANGLE**



**B695**



**B696**

**FLANGED**

Size.....Inches	2	2½	3	3½	4	4½	5	6
Price.....Each	8.60	10.75	15.00	18.50	22.50	27.50	31.00	42.00
Diam. of Flanges..In.	6	7	7½	8½	9	9½	10	11

Size.....Inches	7	8	10	12	*14	*15	*16	
Price.....Each	68.00	77.00	123.00	187.00	350.00	350.00	475.00	
Diam. of Flanges..In.	12½	13½	16	19	21	22½	23½	

\* 14 inch, 15 inch, and 16 inch made to order only at special price.

Template for drilling same as Companion Flanges, Standard. See Index.

**FLANGED GLOBE AND ANGLE VALVES YOKED**

With Jenkins Disc

**B0697 B0698**

Size.....Inches	2	2½	3	3½	4	4½
Each.....		14.00	18.50	21.50	26.00	34.00

Size.....Inches	5	6	7	8	10	12
Each.....	42.00	50.00	80.00	90.00	130.00	185.00

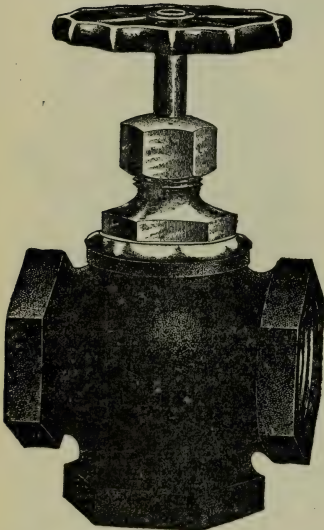
Diameter of flanges same as above.

STANDARD IRON BODY, BRASS MOUNTED  
CROSS VALVES

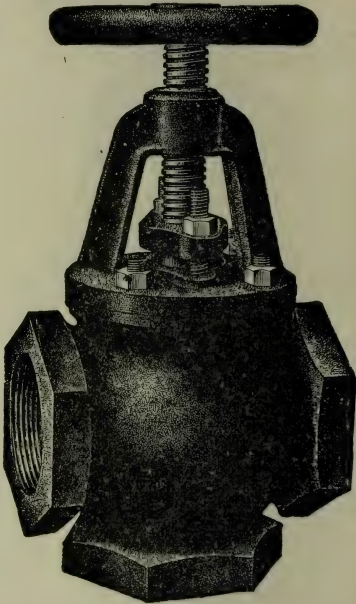
Screwed and Flanged

PLAIN PATTERN

YOKED PATTERN



B705



B706

Size.....inches	2	2½	3	3½	4	4½
B705 {	Screwed .....each	7.25	11.00	16.00	....	....
	Flanged ..... "	8.50	13.00	18.00	....	....
B706 {	Screwed ..... "	....	....	....	20.00	23.50
	Flanged ..... "	....	....	....	25.00	28.50
Diameter Flanges.....inches		....	....	....	8½	9
Size.....inches	5	6	7	8	10	12
B706 {	Screwed ..... "	35.25	47.25	78.00	92.00	162.00
	Flanged ..... "	41.00	54.00	85.00	100.00	175.00
Diameter Flanges.....inches		10	11	12½	13½	16

Template for drilling same as Companion Flanges, Standard, see index.

CROSS VALVE B0708

With Jenkins Disc

Size.....inches	2½	3	3½	4	4½	5	6
Yoked {	Screwed.....each	16.00	21.00	26.00	30.00	42.00	45.00
	Pattern { Flanged ..... "	19.00	24.00	29.00	33.00	45.00	48.00

Diameter Flanges same as above.



**FAIRBANKS ASBESTOS DISC**  
Iron Body, Brass Mounted  
**GLOBE, ANGLE, AND CROSS VALVES**

Plain Pattern

**GLOBE**
**ANGLE**
**CROSS**

**B709**

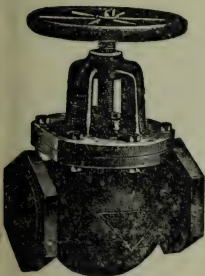
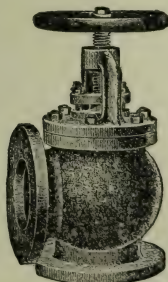
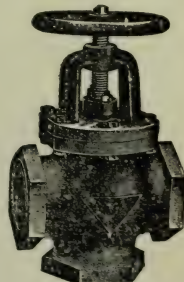
**B710**

**B711**

**GLOBE, ANGLE, AND CROSS VALVES**

Size.....inches	1½	2	2½	3	3½	4
Globe and Angle, Screwed.....each	5.00	7.25	11.00	16.00	18.50	23.00
" " " Flanged..... "	6.00	8.50	13.00	18.00	20.50	25.00
Cross Valve, Screwed..... "	12.00	14.00	16.00	21.00	25.00	27.00
" " " Flanged..... "	15.00	17.00	19.00	24.00	27.00	30.00
Diameter Flanges.....inches	5	6	7	7½	8½	9

Yoked Pattern

**GLOBE**
**ANGLE**
**CROSS**

**B712**

**B713**

**B714**

**GLOBE, ANGLE, CROSS, AND SAFETY VALVES**

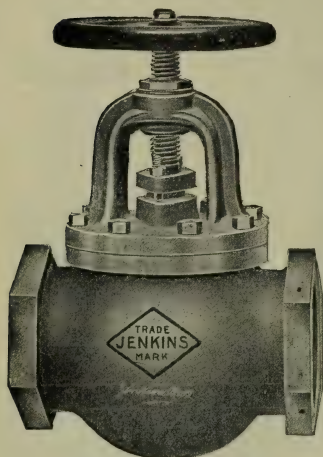
Size...inches	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe } Ser. ea.	10.00	12.00	16.75	19.50	24.00	32.00	40.	48.	80.	90.	130.	185.
& Ang. } Flg. "	11.75	14.00	18.50	21.50	26.00	34.00	42.	50.	90.	90.	130.	185.
Cross } Ser...	14.00	16.00	21.00	26.00	30.00	42.00	45.	58.	...	...	...	...
Valve } Flg...	17.00	19.00	24.00	29.00	33.00	45.00	48.	62.	...	...	...	...
Safety } Ser...	10.25	16.75	22.00	31.00	38.00	46.50	55.	73.	...	...	...	...
Valve } Flg...	12.25	19.00	25.50	34.00	41.50	51.75	62.	80.	...	...	...	...

For Extra Discs, see B559. Flange diameters same as B695.



## JENKINS BROS. IRON BODY VALVES

## SCREWED GLOBE



B715

## FLANGED ANGLE



B716

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Globe and Scr...	10.00	12.00	16.75	19.50	24.00	32.	40.	48.	80.	90.	121.	130.	185.
Angle { Flg...	11.75	14.00	18.50	21.50	26.00	34.	42.	50.	80.	90.	121.	130.	185.
*Without { Scr...	7.25	11.00	16.00										
Yoke { Flg....	8.50	13.00	18.00										
Cross { Scr...		16.00	21.00	26.00	30.00	42.	45.	58.	90.	100.			
Yoked { Flg....		19.00	24.00	29.00	33.00	45.	48.	62.	90.	100.			
Safety { Scr...	11.00	17.00	22.00	31.00	38.00	47.	55.	73.					
Valve { Flg....	13.00	19.00	25.50	34.00	42.00	52.	62.	80.					
Globe, F. to F., Flg.	7½	7½	9¼	10	11¾	12½	13½	16	16¼	18½	20.	21¼	24½
Angle, C. " F., "	3¾	4½	4¾	5¾	5¾	6¼	6½	8	8	9¼	10.	10¾	12¼
Diam. Flgs.....	6	7	7½	8½	9	9¼	10	11	12½	13½	15.	16	19

For Jenkins Discs see B565.

Valves are suitable for 150 pounds pressure. When **Steam** or **Hot Water** pressure is over 100 pounds the special metallic disc is recommended. For **Cold Water**, **Air** or **Gas** the special soft composition disc is recommended.

\*Jenkins Valves without Yoke are similar to B709 and B710.

**Flanged Globe and Angle:** 14-in., \$334.00; 16-in., \$400.00; 18-in., \$540.00; 20-in., \$620.00; 24-in., \$1,260.00.

Safeties are Cross or Angle pattern; if over 125 pounds requires special levers.

## JENKINS BROS. GLOBE AND ANGLE VALVES

With Extra Heavy Diameter and Thickness of Flanges, for  
150 Pounds Working Pressure

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Price .....each	14.25	17.50	23.50	28.00	35.00	45.	53.	62.	95.	110.	145.	151.	210.
Globe, F. to F....	8½	10	11¾	12½	13¾	14½	15½	17	18½	20	21¼	23	26
Angle, C. to F....	4¼	5	5¾	6¼	6¾	7¼	7¾	8¼	9¼	10	10¾	11½	13
Diam. of Flgs....	6½	7½	8½	9	10	10¾	11	12¼	14	15	16	17½	20

JENKINS BROS.

IRON BODY, BRASS MOUNTED CHECK VALVES

HORIZONTAL, FLANGED

ANGLE, SCREWED



B717



B718

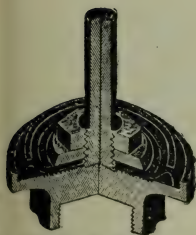
HORIZONTAL, ANGLE AND VERTICAL

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8
Screwed.....	8.00	11.00	14.00	17.00	20.00	25.00	30.00	40.00	65.00	80.00
Flanged.....	10.00	13.00	16.50	20.00	23.00	28.00	33.00	43.00	65.00	80.00
Face to F. Hor., Flanged..	7½	7½	9¼	10	11¾	12½	13½	16	16¼	18½
Center to F. Ang., Flanged	3¾	4½	4⅝	5¾	5¾	6¼	6½	8	8	9¼
Diam. Flanges....	6	7	7½	8½	9	9¼	10	11	12½	13½

Larger sizes quoted on application.

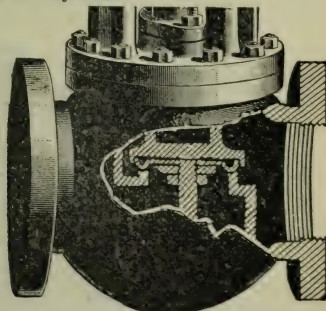
METALLIC SPRING DISCS

For Flat Seat Valves of any Make



Disc in Holder for  
Iron Body Valves

B719



Disc and Holder in Valve

When ordering state make of valve. We advise ordering holders with first order of discs, to insure perfect fit. For renewals order discs only.

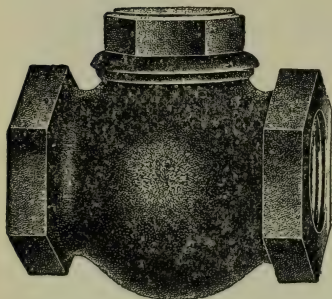
Size Valve..inches	3½	4	4½	5	6	7	8	9	10	12
Disc only.....each	2.40	2.80	3.60	4.00	4.80	7.20	8.00	12.00	12.80	20.00
" and Holder.. "	6.10	7.75	10.00	13.75	15.60	24.80	27.60	40.00	44.50	66.80

For smaller sizes for brass valves see B555.

# STANDARD IRON BODY BRASS MOUNTED CHECK VALVES

HORIZONTAL      Screwed and Flanged

ANGLE



B725



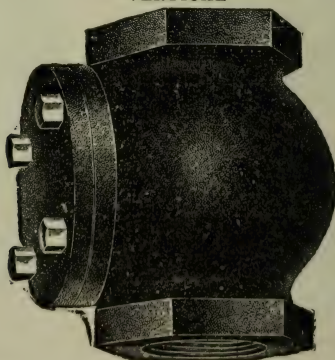
B726

Size.....inches	2	2½	3	3½	4	4½	5
Screwed.....each	3.60	6.50	8.90	12.25	14.25	19.00	22.00
Flanged....."	5.25	8.25	11.50	15.50	18.00	22.50	26.00
Diameter of Flanges..inches	6	7	7½	8½	9	9¼	10

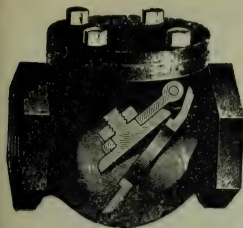
Size.....inches	6	7	8	10	12	14	16
Screwed.....each	30.00	45.00	57.00	105.00	155.00	.....	.....
Flanged....."	35.00	50.00	62.00	115.00	175.00	300.00	425.00
Diameter of Flanges..inches	11	12½	13½	16	19	21	22½

VERTICAL



B727

Size..inches	2	2½	3	3½	4	4½	5	6	7	8
Screwed. ea.	7.00	9.50	12.50	17.00	21.00	30.00	33.00	40.00	62.00	73.00
Flanged. " "	8.75	11.50	15.00	20.00	25.00	33.50	37.00	45.00	67.00	78.00
Diam. of Fl'g's, ins.	6	7	7½	8½	9	9¼	10	11	12½	13½



**B730**

## STANDARD IRON BODY STRAIGHT-WAY SWING CHECK VALVES

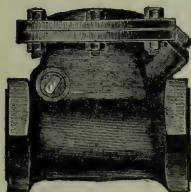
With Brass Seat

Size .....inches	2½	3	3½	4	5	6
Screwed.....each	15.00	18.00	24.00	27.00	38.00	48.00
Flanged.....“	17.00	21.00	27.00	30.00	42.00	52.00
Bell End.....“	.....	.....	.....	35.00	48.00	60.00
Diameter of Flanges .....inches	7	7½	8½	9	10	11
Size .....inches	7	8	10	12	14	16
Screwed.....each	62.00	75.00	125.00	200.00	.....	.....
Flanged.....“	67.00	80.00	135.00	220.00	350.00	475.00
Bell End.....“	.....	90.00	160.00	265.00	.....	500.00
Diameter of Flanges.....inches	12½	13½	16	19	21	23½

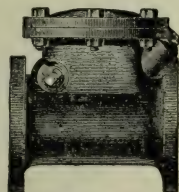
Swing Check Valves, screwed and flanged, for water, have leather discs; for steam, have brass discs. Hub End Swing Check Valves always have leather discs. If not so specified, screwed and flanged Swing Check Valves with brass will always be sent.

## PRATT & CADY IRON BODY STRAIGHT-WAY SWING CHECK VALVES

With Brass Seat and Rotating Disc



**B731**



**B732**

### SCREWED, FLANGED, OR BELL END

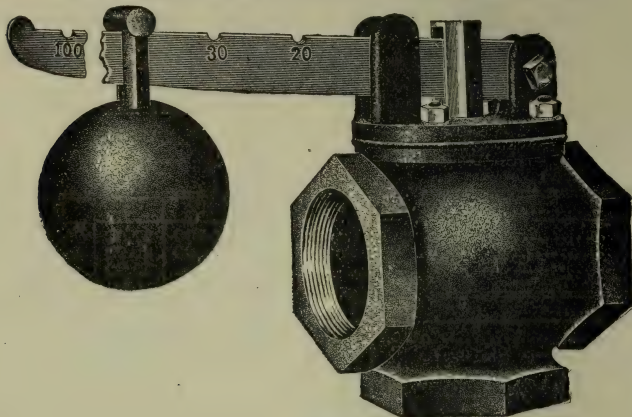
Size.....inches	2	2½	3	3½	4	4½	5
Price.....each	6.25	10.00	12.00	16.00	18.00	21.50	25.00
Diam. of Flanges.....inches	6	7	7½	8½	9	9½	10
Face to Face Flanged “	8¾	8¼	8	9¾	10½	11¾	11¾
Size.....inches	6	7	8	10	12	14	16
Price.....each	32.00	41.00	50.00	104.00	152.00	289.00	334.00
Diam. of Flanges.....inches	11	12½	13½	16	19	21	23½
Face to Face Flanged “	13¾	14¾	15¾	19¾	22½	25	34

Can be furnished with brass, leather, or asbestos discs.  
Can also be made **Angle Pattern** if desired.



**STANDARD IRON BODY, LEVER SAFETY VALVES**

Cross Pattern. Brass Mounted. Screwed and Flanged

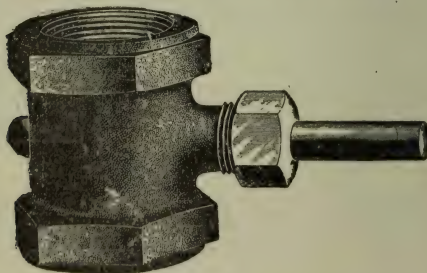
**B735**

Size..inches	2	2½	3	3½	4	4½	5	6	7	8
Screwed...ea.	7.80	13.25	17.25	23.00	28.75	34.50	41.50	57.75	93.50	132.00
Flanged.. "	10.25	16.00	21.50	27.50	34.00	40.00	48.00	65.00	100.00	140.00
Diam. Flg.in.	6	7	7½	8½	9	9½	10	11	12½	13½

Same list applies to Cross and Angle Safety Valves.

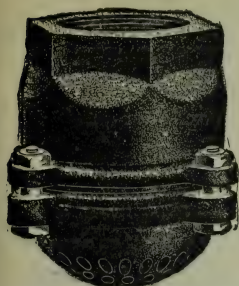
**IRON BODY BUTTERFLY VALVES**

Brass Trimmed. Screwed and Flanged

**B736**

Size..inches	2	2½	3	3½	4	5	6	8	10	12
Screwed...ea.	8.00	9.50	12.00	16.00	18.50	28.50	42.50	....	....	....
Flanged.. "	9.50	11.50	15.00	19.00	22.00	32.00	47.00	90.00	125.00	160.00
Diam. Flg.in.	6	7	7½	8½	9	10	11	13½	16	19

Price does not include a lever.



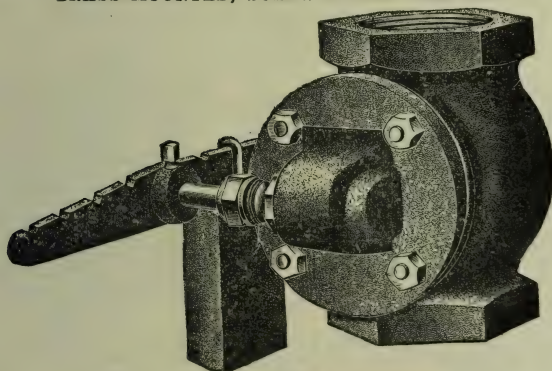
# **IRON FOOT VALVES WITH STRAINER SCREWED AND FLANGED**

**B737**

Size.....Inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Screwed.....Each	1.15	1.30	1.40	1.90	2.40	3.30	3.90	5.60
Size.....Inches	4	$4\frac{1}{2}$	5	6	7	8	10	12
Screwed.....Each	7.30	10.50	11.25	14.75	35.00	41.00	64.00	100.00
Flanged....."	9.50	13.00	14.00	17.50	38.00	45.00	70.00	112.00
Diam. Flanges...In.	9	$9\frac{1}{4}$	10	11	$12\frac{1}{2}$	$13\frac{1}{2}$	16	19

14-inch Flanged Foot Valve, \$150.00; 16-inch Flanged Foot Valve, \$200.00.

# **STANDARD IRON BODY BACK PRESSURE VALVES BRASS MOUNTED, SCREWED AND FLANGED**

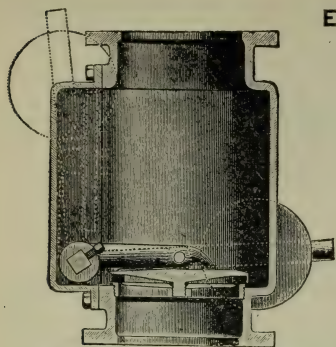


**B738**

Size.....Inches	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
Screwed.....Each	9.00	11.00	13.00	15.00	19.00	22.50	28.50	33.50
Flanged....."				17.50	22.00	26.00	32.00	37.00
Diam. Flanges. Inches		6	7	$7\frac{1}{2}$	$8\frac{1}{2}$	9	$9\frac{1}{4}$	10
Size.....Inches	6	7	8	10	12	14	16	
Screwed.....Each	43.00	70.00	85.00	120.00	180.00			
Flanged....."	47.00	75.00	90.00	130.00	200.00	350.00	475.00	
Diam. Flanges. Inches	11	$12\frac{1}{2}$	$13\frac{1}{2}$	16	19	21	$23\frac{1}{2}$	

Standard Back Pressure Valves—one size larger than the exhaust pipe should be used, and bushed to fit the pipe. This makes a more satisfactory job.

In places where pressure changes often or rapidly, a balanced valve should be used. See succeeding pages.



**EXCELSIOR STRAIGHT-WAY  
BACK PRESSURE  
VALVE**

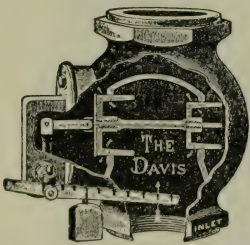
Screwed and Flanged

**B740**

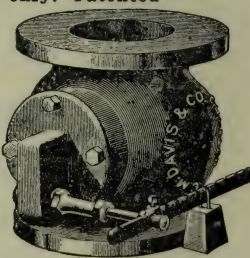
Used horizontal, vertical, or at any angle. Noiseless, simple, and full area of pipe size.  
Can be used as free exhaust on a condensing plant.  
Can be furnished arranged for water seal when desired for use in vertical position only.  
\*Larger sizes quoted on application.

Size..... Inches	2½	3	3½	4	4½	5	6	7
Screwed..... Each	15.00	18.00	21.00	24.00	30.00	33.00	43.00	57.00
Flanged..... " "	16.00	19.00	23.00	25.00	31.00	34.50	44.50	57.00
Diameter Flanges..... Inches	7	7½	8½	9	9¾	10	11	12½
Size..... Inches	8	9	10	12	14	16	18	20
Flanged..... Each	71.00	88.00	102.00	143.00	255.00	310.00	380.00	450.00
Diameter Flanges..... Inches	13½	15	16	19	21	23½	25	27½

**DAVIS NOISELESS BACK PRESSURE VALVE**  
For Non-condensing Engines only. Patented



**B741**



**B742**

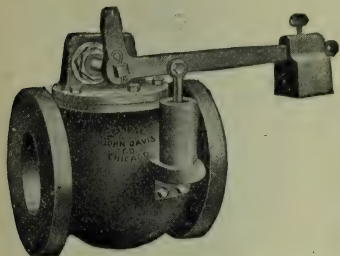
**SCREWED OR FLANGED**

Size..... Inches	2	2½	3	3½	4	4½	5	6	7	8
Price..... Each	14.00	16.00	18.00	22.00	25.00	30.00	40.00	60.00	80.00	100.00
Diameter Flanges In.	6	7	7½	8½	9	9¾	10	11	12½	13½
Size..... Inches	9	10	12	14	15	16	18	20	22	24
Price..... Each	120.00	145.00	220.00	345.00	400.00	465.00	600.00	750.00	900.00	1050.
Diameter Flanges In.	15	16	19	21		23½	25	27½		

Sizes from 2 to 12 inches inclusive have either screwed or flanged ends; 14 inches and over have flanged ends only.  
These valves may be placed in a horizontal position with the cover on the top, bottom, or side, in a vertical position, or in an oblique position. The most desirable for sensitive regulation, however, is horizontal with the cover on top.  
**Vacuum System Back Pressure Valves**  
When Davis Valves are to be used on steam heating systems at, or below atmospheric pressure, the discs may be bevel-seated and specially ground, when so ordered, and the valve provided with a counter-balance lever to permit of closer adjustment.

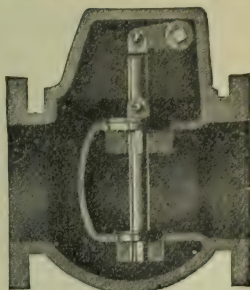


# ECLIPSE PNEUMATIC BACK PRESSURE VALVES



**B743**

Horizontal  
or  
Vertical  
Screwed or  
Flanged



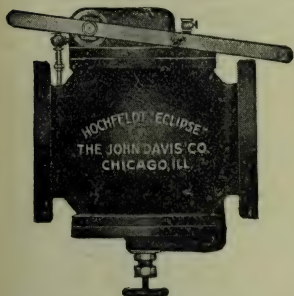
**Sectional View Horizontal Pattern**

Size.....inches	2	2½	3	4	5	6
Price.....each	14.00	16.00	18.00	25.00	40.00	60.00
Diameter Flanges.....inches	6	7	7½	9	10	11
Face to Face....."	7½	7½	9¼	10	11¼	12

Larger sizes use Hochfeldt "Eclipse" Valves.

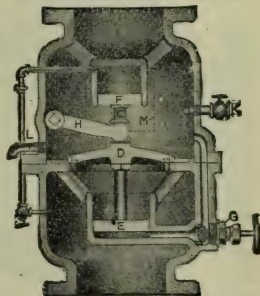
These valves are two seated and provided with air cushion, which prevents any hammering, and makes it a noiseless valve. The valves are especially adapted for exhaust pipes of non-condensing engines. Specify whether valves are to be used in a horizontal or vertical position. To operate slow, fill dash pot with cylinder oil

## THE HOCHFELDT "ECLIPSE" BACK PRESSURE VALVE



**B745.—Horizontal**

For Condensing  
and Non-con-  
densing Plants



**B746.—Vertical**

Flanged only

(Except 4 and 5 in. Horizontal, can also be furnished Screwed.)

Size.....inches	4	5	6	7	8	9
Price.....each	40.00	55.00	75.00	100.00	130.00	200.00
Diameter Flanges.....inches	9	10	11	12½	13½	15

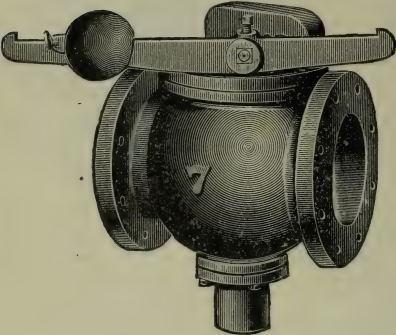
Size.....inches	10	12	14	16	18	20
Price.....each	200.00	275.00	345.00	465.00	600.00	750.00
Diameter Flanges.....inches	16	19	21	23½	25	27½

This valve can be used for a non-condensing plant, or, by closing the controlling valve, it can be converted into a single seated valve for a condensing plant, the lower piston acting as a dash pot. For condensing plants, these valves are usually installed in a branch leading from the main exhaust pipe.



# KIELEY NOISELESS BACK PRESSURE VALVES

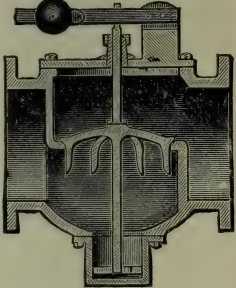
COMPOSITE SEMI-BALANCED BACK  
PRESSURE VALVE  
Horizontal Pattern  
110 Style



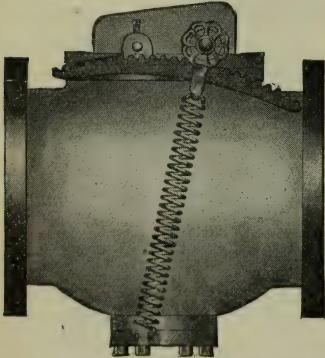
B747  
Sizes 2 to 14-inch

B747 is suitable where a back pressure of more than 5 pounds is desired to be maintained.

SINGLE SEATED BACK  
PRESSURE VALVE FOR  
VACUUM SYSTEMS  
Sectional View, Horizontal Pattern  
109 Style



B748



KIELEY SPRING-WEIGHTED BACK  
PRESSURE VALVE AND EXHAUST OR  
ATMOSPHERIC RELIEF VALVE

B749

For Horizontal pipe 111 style.  
For Vertical pipe 112 style.  
Sizes 2 to 24 inch.

Specify whether valve is to be used as a  
Back Pressure Valve or an Atmospheric Relief Valve.

We strongly recommend that Back Pressure Valves be used in horizontal positions where conditions will possibly permit.

Screwed and Flanged 4-inch and smaller. Larger sizes Flanged only.

Size ..Inches	2	2½	3	3½	4	4½	5	6	7	8
Price .....ea.	20.00	24.00	30.00	35.00	40.00	45.00	55.00	75.00	100.00	130.00
Diam.Flg.In.	6	7	7½	8½	9	9¼	10	11	12½	13½
Size ..Inches	9-10	12	14	16	18	20	22	24	.....	.....
Price .....ea.	200.	275.	345.	465.	600.	750.	900.	1050.	.....	.....
Diam.Flg.In.	15-16	19	21	23½	25	27½	.....	.....	.....	.....

Larger sizes quoted on application.

In ordering it is especially important that we have particulars of service upon which valve is to be used.

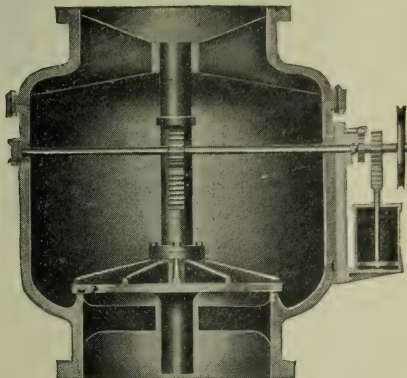
# DAVIS AUTOMATIC RELIEF VALVES

HORIZONTAL



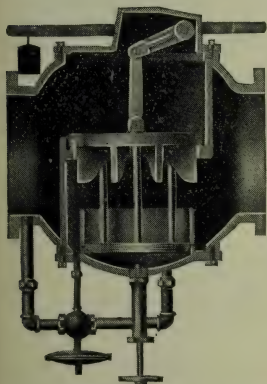
B751

VERTICAL



B752

The Davis Automatic Relief Valves are designed for use with condensing engines to relieve direct to the atmosphere any pressure which may accumulate in the condenser, if for any reason the vacuum is lost.



B753

## DAVIS AUTOMATIC COMBINATION BACK PRESSURE AND RELIEF VALVE

Patented

Is either a semi-balanced Noiseless Back Pressure Valve or an Automatic Atmospheric Relief Valve for Condensers, and changes from one condition to another automatically.

May be used in either Horizontal or Vertical position, preferably horizontal, length face to face in Vertical position being same as Horizontal listed below.

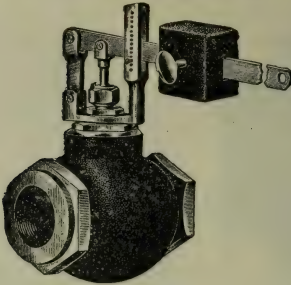
Price List for Relief, also Combination, Valves.

Size.....in.	6	8	10	12	14	16	18	20	22	24	30
Price .....ea.	\$100	170	270	335	415	500	584	670	917	1170	2000
Face to F., Hori...in.	16	20	24	29	32	36 <sup>3</sup> / <sub>4</sub>	39 <sup>3</sup> / <sub>4</sub>	43 <sup>1</sup> / <sub>4</sub>	46 <sup>1</sup> / <sub>2</sub>	52	60
Face to F., Vert..."	14	16	16 <sup>1</sup> / <sub>2</sub>	21	24	26	26	36	39	42	52
Diam. Fl....."	11	13 <sup>1</sup> / <sub>2</sub>	16	19	21	23 <sup>1</sup> / <sub>2</sub>	25	27 <sup>1</sup> / <sub>2</sub>	29 <sup>1</sup> / <sub>2</sub>	32	38 <sup>3</sup> / <sub>4</sub>

26 inch \$1420 list; 28 inch \$1600 list.

BALANCED VALVES

WITH WEIGHTED LEVER



B754

For use in Connection with Steam, Air, Gas, Water, and other Fluids

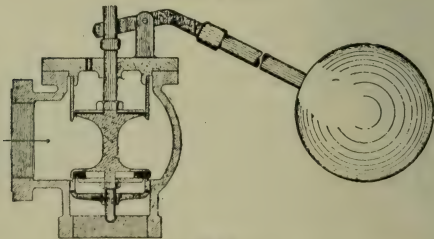
Size.....inches	IRON BODY, BRASS MOUNTED											
	1½	2	2½	3	3½	4	5	6	7	8	10	12
Each .....	11.	14.	19.	25.	30.	35.	45.	55.	65.	75.	90.	130.

Valves up to and including 1½ inch have a swivel-head which will permit the shifting of the lever to any direction. Larger valves can be equipped with swivel-heads when so ordered.

Sizes 1½ inches have screwed ends only; from 2 to 6 inches inclusive have either screwed or flanged ends; 7 inches and over have flanged ends only.

PERFECTION BALANCED TANK VALVE

WITH FLOAT



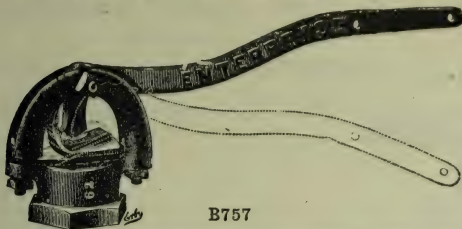
B755

Size.....inches	1	1½	2	2½	3	4	5	6
With Float.....	10.00	15.00	20.00	25.00	35.00	50.00	80.00	110.00

These valves are made of brass, sizes 1 inch to 3 inches, inclusive. The 4-inch to 6-inch sizes are of cast-iron, screwed pattern with brass trimmings.

The valve is connected to the end of delivery pipe, with inlet on side of valve, and a hush pipe is taken from valve outlet to about 2 feet below highest water level in tank. The valve is then ready to operate on high or low pressure.

ENTERPRISE FLOAT VALVE

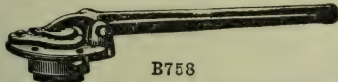


B757

Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Iron.....each	1.25	1.38	1.50	3.00	5.00	7.50	10.00

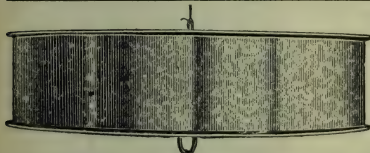
By reversing the lever, a perfect working outlet valve is had

COMMON FLOAT VALVE



B758

Pipe Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$
Iron.....each	.80	.80	1.00



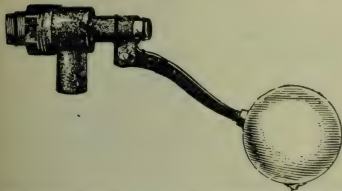
GALVANIZED FLAT FLOATS

For Float Valves

B759

8 inches in Diameter.....each	1.25	12 inches in Diameter.....each	2.00
-------------------------------	------	--------------------------------	------

Larger Sizes Special.



COMPRESSION BALL COCK

Brass

B762

Float balls are extra.

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Cock and Lever.....each	1.20	2.00	3.00	5.00	7.50	14.20	29.20	33.35

COPPER BALL FLOATS

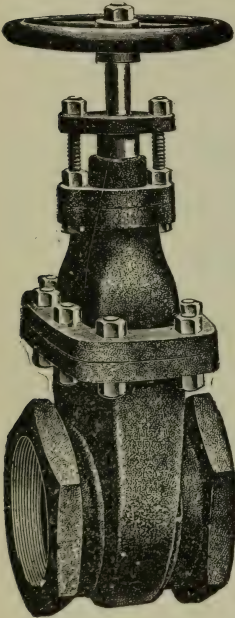
Diameter..... inches	4	5	6	7	8	9	10	12	15	20
Light.....per dozen	23.00	27.00	34.00	48.00	27.00	36.00	48.00	60.00		
Heavy.....per dozen	23.00	27.00	34.00	49.00	64.00	79.00	105.00	168.00	342.00	420.00

Light Floats are for open tanks. The Heavy Floats will stand heavy pressures, for steam traps, etc.



STANDARD IRON BODY STRAIGHT-WAY  
GATE VALVES

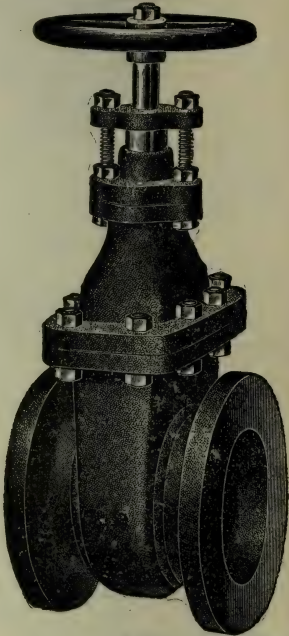
SCREWED



B770

BRASS TRIMMINGS

FLANGED



B771

SCREWED AND FLANGED

Size.....inches	2	2½	3	3½	4	4½	5	6
Each.....	10.00	12.00	15.00	18.00	20.00	23.00	25.00	30.00
Diam. Flanges...inches	6	7	7½	8½	9	9¼	10	11
Size.....inches	7	8	9	10	12	14	15	16
Each.....	45.00	55.00	80.00	90.00	125.	....	....	....
“ Flanged only.....	....	....	....	....	....	190.00	190.00	275.00
Diam. Flanges...inches	12½	13½	15	16	19	21	22¼	23½
Size.....inches	18	20	22	24	30	36	....	....
Flanged only.....each	375.	425.	525.	600.	1200.	....	....	....

These valves have stationary stems and open to the left.

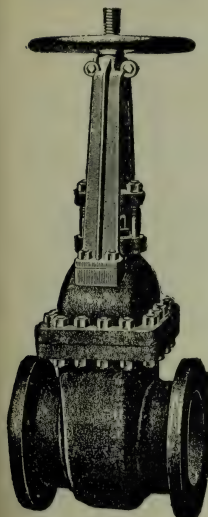
ALL IRON VALVES

For Gas, Acids, etc. Use above price list. Discount quoted on application.

CRANE FERROSTEEL VALVES

Use above list prices. Discount quoted on application.

OUTSIDE SCREW AND  
YOKE, FLANGED



B772

IRON BODY  
STRAIGHT WAY GATE VALVES

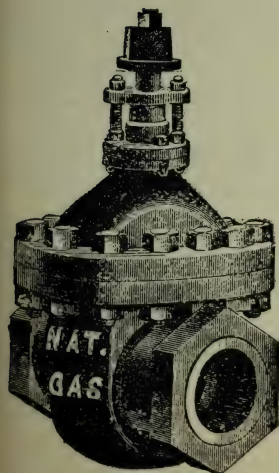
Brass Trimmings

SCREWED AND FLANGED

Inches.	2½	3	3½	4	4½	5	6
Each ..	20.00	23.00	28.00	33.00	40.00	46.00	55.00
Flgs..ins.	7	7½	8½	9	9¾	10	11
Inches.	7	8	9	10	12	14	15
Each ..	70.00	90.00	115.00	135.00	170.00	240.00	240.00
Flgs..ins.	12½	13½	15	16	19	21	22¼
Inches.	16	18	20	22	24	30	36
Each ..	350.00	475.00	550.00	650.00	750.00	1400.00	.....
Flgs..ins.	23½	25	27½	29½	32	38¾	45¾

NOTE.—The spindle moving in and out of this form of outside screw and yoke valve indicates whether valve is open, partly open, or shut.

NATURAL GAS  
ALL IRON GATE VALVE



B773

SEE  
GAS GOODS

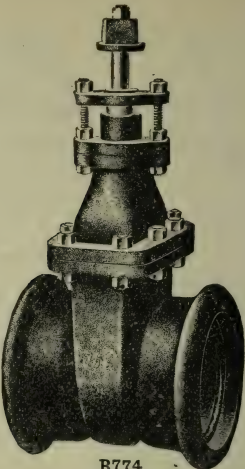
D1819

HUB END

STATIONARY STEM  
WITH NUT

WATER GATE

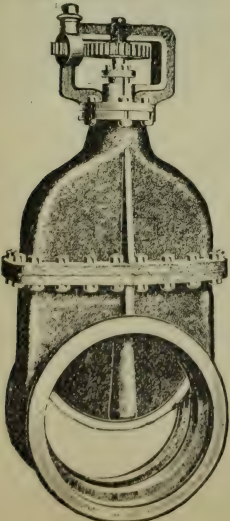
IRON BODY BRASS  
MOUNTED



B774

Size.....inches	2	3	4	5	6	7	8	10
Each.....	10.	15.	20.	25.	30.00	45.00	55.00	90.00
Size.....inches	12	14	16	18	20	22	24	30
Each.....	125.	190.	275.	375.	425.00	525.00	600.00	1200.
With By-pass.....	.....	265.	350.	450.	525.00	625.00	725.00	1400.

These valves can be furnished special with spigot ends or with flange one end. Can be furnished all iron for gas or acids.  
Have stationary stems, open to the left; can be made to open to right.



BRASS MOUNTED  
IRON BODY GATE VALVE

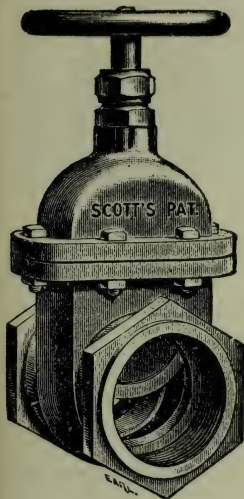
With Spur Gear

B774½

Price with either Spur or Bevel Gear, either Hub or Flange Ends

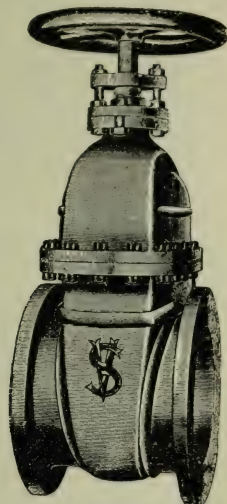
Size.....inches	16	18	20	22	24	30
Each.....	375.	475.	550.	650.	725.	1400.
With By-pass.....	450.	550.	650.	750.	850.	1600.

# SCOTT STANDARD IRON BODY STRAIGHT WAY GATE VALVES



B775

Bronze Mounted,  
Stationary Stem



B776

Sizes 6-inch and smaller have brass packing nut.  
Sizes 7-inch and larger have gland packing box.

Size.....inches	2	2½	3	3½	4	4½	5
Screwed and Flanged.....	10.00	12.00	15.00	18.00	20.00	23.00	25.00
With Outside Screw and Yoke.....	20.00	23.00	28.00	33.00	40.00	46.00	46.00
Flanged Face to Face.....	6	6¾	7¾	8½	9	9¾	9½
Diam. Flanges.....	6	7	7½	8½	9	9¾	10
Size.....inches	6	7	8	9	10	12	14
Screwed and Flanged.....	30.00	45.00	55.00	80.00	90.00	125.00	190.00
With Outside Screw and Yoke.....	55.00	70.00	90.00	115.00	135.00	170.00	240.00
Flanged Face to Face.....	11	11½	12¼	13	13¾	14¾	17¾
Diam. Flanges.....	11	12½	13½	15	16	19	21

Flanged only, Stationary Stem: 16-in., \$275; 18-in., \$375; 20-in., \$425.

Flanged only, Outside Screw and Yoke: 14-in., \$240.00; 16-in., \$350.00; 18-in., \$475.00; 20-in., \$550.00.

## SCOTT LIGHT PRESSURE SINGLE DISC VALVE—B777

For 40 Pounds Pressure. Flange or Hub End

Disc Made of Cast Iron, with Bronze Ring to Face of Seat

Size.....inches	6	8	10	12	14	16
Each.....	24.00	45.00	70.00	90.00	115.00	150.00
Size.....inches	18	20	22	24	30	48
Each.....	185.00	210.00	275.00	315.00	475.00	.....

Diameter Flanges and Drilling Template, see "Companion Flanges, Standard," Index.



# PRICE LISTS OF SPECIAL STANDARD IRON BODY, BRONZE MOUNTED GATE VALVES

## JENKINS BROS. GATES

With Stationary Stem and Bronze Seat

Size ..... inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Screwed.....each	8.00	12.00	15.00	18.00	21.00	29.00	30.00	36.00	50.00	62.00	71.00	85.00	120.
Flanged..... "	9.00	13.00	16.00	19.00	22.50	31.00	32.00	38.00	50.00	62.00	71.00	85.00	120.
" Face to F., in.	6	7	7½	7¾	8½	8¾	9½	10	11	12½	13¾	14¼	14¾

## FAIRBANKS GATES

Bronze Seat and Bronze Faced Wedge. Screwed or Flanged

Size ..... inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Stationary Stem, .....ea.	7.50	10.75	14.00	18.25	22.00	25.00	27.00	34.00	41.00	51.50	63.	73.	100.
O. Scr. & Yoke..... "	16.50	22.75	26.00	31.75	36.50	44.00	51.00	61.00	71.00	91.00	105.	124.	154.
Flanged, Face to F., in.	6½	7	8¼	9	9½	9¾	10½	10¾	11	11½	12	12½	14

Flanged, Stationary Stem: 14-inch, \$168.00; 16-inch, \$223.00. Outside Screw and Yoke: 14-inch, \$232.00; 16-inch, \$300.00.

Stationary Stem Valves 3½-inch and smaller have screwed packing nut.

## CHAPMAN (LIST NO. 24) GATE

Bronze Mounted, with Babbit Metal Seat. For 150 Pounds Water Pressure, or 80 Pounds (325 Degrees) Steam

Size.....inches	2½	3	3½	4	4½	5	6	7	8	9	10	12
Inside { Screwed ....each	8.40	10.85	13.00	15.75	18.00	20.75	25.75	33.00	42.00	52.50	62.00	85.
Stem { Flanged .... "	8.75	11.25	13.50	16.00	17.50	20.50	25.00	31.50	40.00	49.00	59.00	77.
O. Scr. & { Screwed " "	14.00	17.00	21.00	24.50	28.00	31.00	38.50	46.00	59.00	69.00	82.50	105.
Yoke { Flanged " "	14.50	17.25	21.50	24.75	27.75	31.00	38.00	44.75	57.50	66.50	80.00	97.
Flanged, Face to F...in.	7	8½	8¾	9¼	9½	9¾	10½	10¾	11	11½	12½	12¾

If with By-pass, prices and dimensions are special.

## LUDLOW GATES

Iron Body, Bronze Mountings

Double Gate (List No. 5) 6-inch and less for 100 Pounds Steam Pressure, 7-inch and Larger for 85 Pounds Steam Pressure. Double Gate (List No. 4) for 75 Pounds Steam. Single Gate (List No. 1) Low Steam Pressure or 100 Pounds Water

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	10	12
List { Stationary { Scr.....ea.	.....	.....	15.00	16.50	19.00	23.00	25.00	32.50	38.00	48.00	70.00	88.00
No. 5 { Stem { Flg. " "	.....	.....	16.00	17.50	20.00	23.50	25.50	33.00	38.00	47.00	70.00	88.00
Flanged, Face to F...in.	.....	.....	8	8¼	8¾	9¾	10¾	11¾	11¾	13¾	15	15½
List { Stationary { Scr.....ea.	7.00	10.25	12.25	16.50	18.00	23.00	25.00	30.50	38.00	45.00	64.00	82.50
No. 4 { Stem { Flg. " "	7.50	10.75	13.25	17.50	18.50	23.50	25.50	31.00	38.00	43.50	64.50	80.00
Flanged, Face to F...in.	5	6¼	6¾	8¼	8¾	9¾	10¾	11¾	11¾	11	13¾	14¾
List { Stationary { Scr.....ea.	6.00	8.75	11.00	15.00	16.25	.....	23.75	28.00	35.25	40.00	58.00	74.00
No. 1 { Stem { Flg. " "	6.75	9.50	12.00	15.75	17.25	.....	24.00	28.50	35.75	40.00	58.50	73.00
Flanged, Face to F...in.	5¾	6¼	6¾	8¼	8¾	.....	10¾	11¾	11¾	11	12¾	12¾
Outside Screw and Yoke.....add.	.....	.....	8.50	9.25	10.00	11.00	12.00	14.00	16.00	18.00	23.00	27.50

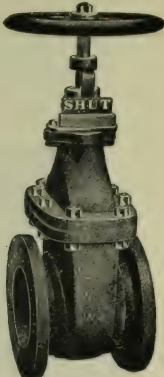
Other sizes, 1, 1¼, 1½, 9-inch, also 14-inch and larger valves quoted on application.

QUICK OPENING



B778

INDICATOR



B779

STANDARD  
IRON BODY GATE  
VALVES

SPECIAL PATTERNS

Can also furnish All Iron Valves.

SCREWED OR FLANGED

Size...inches	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
B778.....each	16.00	18.00	22.00	25.00	27.00	30.00	34.00	40.	57.	69.	96.	110.	150.00
B779..... "	15.00	18.00	22.00	27.00	30.00	34.00	36.00	44.	60.	75.	100.	115.	155.00
Diam of Flgs.. in.	6	7	7½	8½	9	9¼	10	11	12½	13½	15	16	19

Larger sizes quoted on application.

"VICTOR" GATE



B779½

"CLIP" GATE



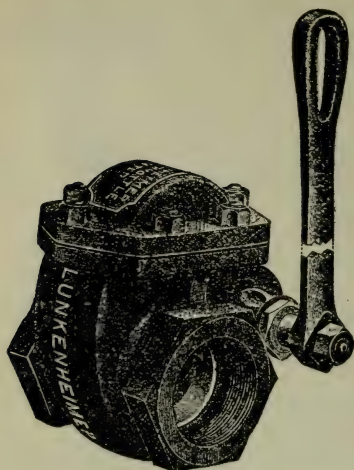
B779½

LUNKENHEIMER  
Iron Body, Brass Mounted  
GATE VALVES

Victor Valves are Double Seated.  
Victor Valves with Outside Screw and Yoke, also with Bypass, quoted on application.  
All Iron Valves take same list as below.

Size.....inches	½	¾	1	1¼	1½	2	2½	3	3½	4
"Victor" Scr. or Flgd.	.....	.....	.....	.....	.....	9.00	11.00	14.00	22.00	29.00
"Clip" Screwed.....	1.50	1.90	2.50	3.50	5.00	7.50	12.00	15.00	18.00	20.00
" " Flanged.....	.....	.....	3.00	4.90	6.00	8.50	13.50	16.90	20.30	22.50
Size.....inches	4½	5	6	7	8	9	10	12	*14	*15
"Victor" Scr. or Flgd.	34.00	42.00	53.00	60.00	75.00	90.00	115.00	170.00	255.00	300.00
"Clip" Screwed.....	23.00	25.00	30.00							
" " Flanged.....	26.00	28.30	33.80							

\* Flanged only.



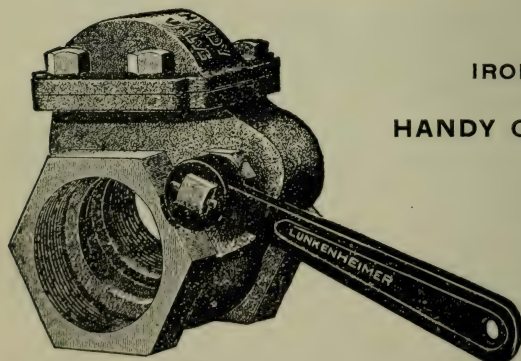
B780

## IRON BODY LEVER THROTTLE VALVE

For Steam Working Pressure  
of 150 Pounds

See Brass Valves, B626  
for smaller sizes.

Inches .....	2	2½	3	3½	4	5	6	8
Screwed .....	8.50	16.00	20.00	25.00	30.00	35.00	40.00	.....



B781

## IRON BODY HANDY GATE VALVE

For Pressures up to  
75 Pounds

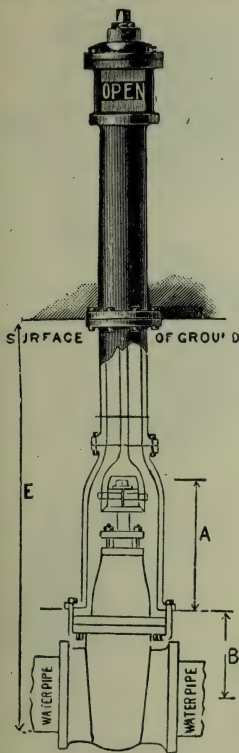
See Brass Valves, B627  
for smaller sizes.

Size. .... inches	2	2½	3	3½	4
Screwed .....	7.00	12.00	15.00	18.00	21.00
Size. .... inches	4½	5	6	8	.....
Screwed .....	25.00	30.00	35.00	65.00	.....

Handy Valve can also be furnished ¼ inch to 6 inches in all iron. Use same list.

## INDICATOR POSTS

For Underground Valves



**B784**

Prices on Application

## FLOOR STANDS

For Valves Beneath Floors  
with or without  
Indicator



**B785**

Prices on Appli-  
cation

## INDICATOR POST

**B784**

This Post indicates whether the valve in the main is open or shut. It can be used with any make of valve.

When ordering, state the distance from surface of ground to bottom of pipe, and whether valves are to open by turning to right or left, also give the number of turns to fully open or close valve, and the distance from bottom of pipe to top of opening nut on valve, and the square of the nut on valve, also size and shape of nut wanted on post, also state distance from bottom of pipe to top of stuffing box on valve, also send sketch of stuffing box with dimensions marked.

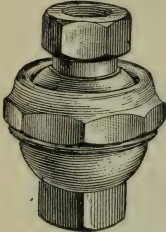


FLEXIBLE JOINTS

FOR STEAM, AIR, AND GAS

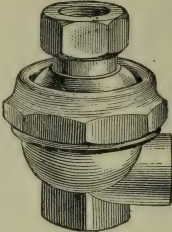
FOR LIQUIDS

No. 1



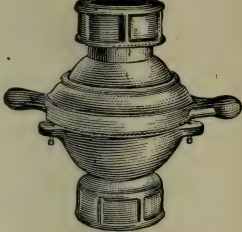
B786

No. 2



B787

No. 3



B788

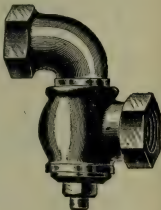
Size.....inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Nos. 1 and 3..ea.	2.75	3.00	3.00	3.25	3.75	4.25	5.25	6.00	7.50	9.00
No. 2....."	3.00	3.25	3.25	3.50	4.00	4.50	5.50	6.25	8.75	10.50

Size.....inches	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	*7	*8	*9	*10
Nos. 1 and 3..ea.	11.25	14.00	15.00	18.75	18.75	25.00	50.00	75.00	95.00	115.00
No. 2....."	12.25	15.50	16.75	20.75	20.75	27.50	55.00	82.50	104.50	126.50

\*Screwed or Flanged. In ordering state whether steam, air, or liquid is to be conveyed.

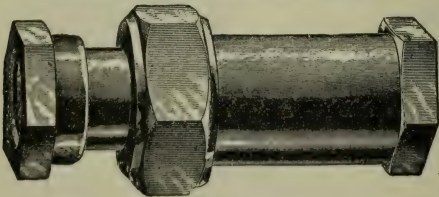
BRASS STEAM JOINTS—B789

Size....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough...each	1.90	2.20	2.50	3.50	5.00	6.50	9.00	13.00
Finished "	2.30	2.70	3.00	4.00	5.75	7.25	10.00	15.00



B789

BRASS EXPANSION JOINTS



B790

STANDARD TRAVERSE

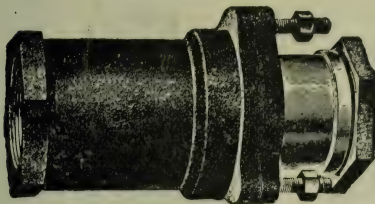
Size .....	inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Traverse .....	inches	2	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{3}{4}$
Price .....	each	1.50	2.20	2.75	4.00	5.00	8.00	17.50	24.00

SPECIAL TRAVERSE

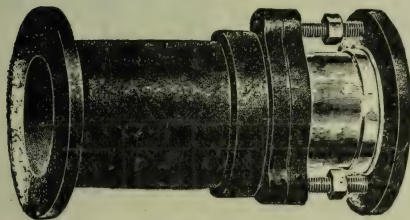
Traverse	Size .....	inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
6 inches	Price.....	each	8.25	9.00	10.00	11.50	13.50	24.00
8 "	"	"	9.00	10.00	11.25	13.00	15.50	27.00
10 "	"	"	9.75	11.00	12.50	14.50	17.50	30.00
12 "	"	"	10.50	12.00	13.75	16.00	19.50	33.00

## IRON BODY EXPANSION JOINTS

With Brass Sleeve



B791 Screwed



B792 Flanged

## IRON BODY EXPANSION JOINTS.—Screwed, Standard Traverse

Size.....inches	2	2½	3	3½	4	5	6
Traverse.....inches	2½	2½	2¾	3	3¼	4	5
Screwed.....each	7.00	8.00	10.00	14.00	18.00	38.00	45.00
Flanged....."	15.00	16.00	18.50	25.00	30.00	48.00	55.00
Diam. Flanges.....inches	6	7	7½	8½	9	10	11

Size.....inches	7	8	9	10	12	14-15	16
Traverse.....inches	6	7	7	7	8	10	10
Screwed.....each	70.00	100.00	110.00	160.00	225.00	.....	.....
Flanged....."	80.00	110.00	120.00	175.00	250.00	50.000	600.00
Diam. Flanges.....inches	12½	13½	15	16	19	21-22¼	23½

## IRON BODY EXPANSION JOINTS.—Special Traverse

Traverse	Size.....in.	2	2½	3	3½	4	5	6	7	8
Screwed	6 in. Price.....ea.	11.00	13.00	17.50	25.00	30.00	45.00	55.00	.....	.....
	10 "	16.00	19.00	25.00	35.00	42.00	62.00	80.00	100.00	140.00
	12 "	18.50	22.00	29.00	40.00	48.00	70.00	92.50	115.00	160.00
	14 "	21.00	25.00	33.00	45.00	54.00	78.00	.....	.....	.....
	16 "	23.50	28.00	37.00	50.00	60.00	86.00	.....	.....	.....
	18 "	26.00	31.00	41.00	55.00	66.00	.....	.....	.....	.....
Flanged	6 "	18.00	20.00	25.00	35.00	40.00	55.00	65.00	.....	.....
	10 "	23.00	26.00	32.50	45.00	52.00	72.00	90.00	112.00	150.00
	12 "	25.50	29.00	36.50	50.00	58.00	80.00	102.50	127.00	170.00
	14 "	28.00	32.00	40.50	55.00	64.00	88.00	.....	.....	.....
	16 "	30.50	35.00	44.50	60.00	70.00	96.00	.....	.....	.....
	18 "	33.00	38.00	48.50	65.00	76.00	.....	.....	.....	.....

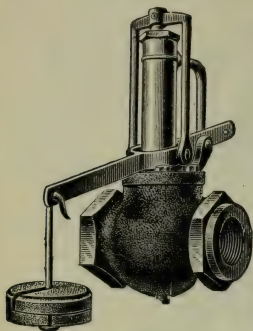
The expansion will average about 1 inch in 50 feet of pipe. Template for drilling, see Index, Companion Flanges, Standard.

**Double Expansion Joints** quoted on application.

Iron Expansion Joints can be furnished with iron sleeve, special.

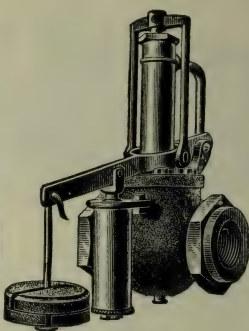
## DAVIS PRESSURE REGULATING VALVES

No. 1.



B800

No. 2.



B801

No. 3



B802

Size.....inches	$\frac{1}{2}$ and $\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$	3	$3\frac{1}{2}$
No. 1.....each	20.00	22.00	24.00	25.00	30.00	35.00	40.00	50.00
Nos. 2 and 4... "	25.00	27.00	29.00	30.00	36.00	42.00	48.00	58.00
End to End, Nos. 1 and 2, ea.	$3\frac{1}{4}$	4	$4\frac{1}{2}$	$6\frac{3}{4}$	7	$7\frac{7}{8}$	$9\frac{1}{4}$	$10\frac{3}{4}$
Size.....inches	4	5	6	7	8	10	12	14
No. 1.....each	60.00	75.00	100.00	135.00	175.00	275.00	400.00	500.00
Nos. 2 and 4... "	70.00	90.00	120.00	160.00	200.00	300.00	435.00	600.00
Face to Face, Nos. 1 and 2, ea.	$10\frac{3}{4}$	12	13	14	$16\frac{3}{4}$	$18\frac{1}{2}$	22	$24\frac{1}{4}$
Diam. of Fl....each	9	10	11	$12\frac{1}{2}$	$13\frac{1}{2}$	16	19	21

$\frac{3}{4}$  to  $1\frac{1}{2}$ -inch, inclusive, Screwed Ends; 2 to 6 inch inclusive, either Screwed or Flanged Ends; 7 to 15-inch, Flanged Ends.

No. 1 is designed for all purposes where there is no pulsation of pressure, such as Steam Heating, etc.

No. 2 is to be used where there is a vibration or pulsation of pressure—for large Power Plants, Electric Light Stations, etc. No. 4 is similar to No. 2 except it has Hub Ends for Wooden or Cast Iron Water Pipe. By a slight change in internal construction it can also be used as a relief valve.

## PRICE LIST No. 3 REGULATOR—B802

Size.....inches	$1\frac{1}{2} \times 3$	$2 \times 4$	$2\frac{1}{2} \times 5$	$3 \times 6$	$4 \times 8$	$5 \times 10$	$6 \times 12$	$8 \times 14$
Price.....each	40	50	65	85	135	195	280	360
Length, face to face	$7\frac{1}{4}$	8	9	10	$12\frac{1}{2}$	15	$17\frac{1}{2}$	$20\frac{1}{2}$

In ordering give the initial and delivery pressures and specify the service for which the valve is wanted.

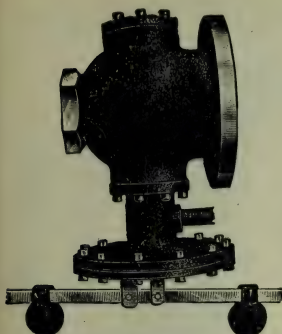
Sizes  $1\frac{1}{2} \times 3$  and  $2 \times 4$  have screwed ends only;  $2\frac{1}{2} \times 5$  and  $3 \times 6$  have inlet screwed and outlet flanged;  $4 \times 8$  to  $8 \times 14$  have inlet and outlet flanged only.

The No. 3 Regulator is constructed along the same lines as the Nos. 1 and 2, the only difference being that it has an expanded outlet. It is adapted to high or low pressure. A lug is cast on the body so that a dash-pot can be attached if found necessary.

## DAVIS BLOWER REGULATOR

Size....ins.	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6	7	8	10	12	14
Price, each	25	25	27	29	30	36	42	48	58	70	90	120	160	200	300	435	600

Construction similar to No. 2 Regulator, but steam flows in opposite direction. Placed in steam feed pipe between boiler and fan engine, and is weighted for the desired boiler pressure.



## DAVIS "P & W" REDUCING VALVE B804

This valve is especially designed for the Paul or Webster Systems of steam heating, but is satisfactory for any low pressure or vacuum system.

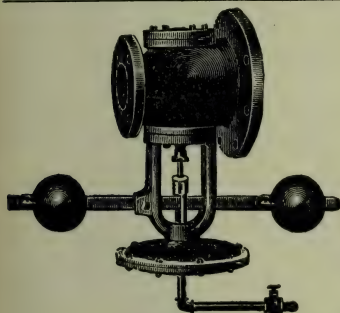
This valve should be placed in a horizontal position, preferably with the diaphragm facing down, that the water of condensation may protect it from the heat of the steam.

### EXPANDED OUTLET

Size.....inches	1½x3	2x4	2½x5	3x6	4x8	5x10	6x12	8x14
Price.....	50	60	70	100	160	200	300	400

The 2 x 4 valve has both ends screwed; 2½ x 5 and 3 x 6 have inlet screwed and outlet flanged; 4 x 8 and over have both ends flanged.

Size.....inches	1	1¼	1½	2	2½	3	3½	4	5	6	7	8	9	10
Straight Sizes.....	22	29	34	40	50	60	70	100	135	175	220	285	325	360



## "ECLIPSE" VACUUM-PRESSURE REGULATING VALVE B805 (Fig. 71)

For use in atmospheric vacuum or very low pressure Heating Systems.

The Valve is constructed with an independent diaphragm which is actuated by pressure taken from low pressure side at a distance from the Valve at a point of regulation designated by the company installing the system.

State boiler pressure and pressure to be reduced to.

### PRICE WITH ENLARGED OUTLET

Size.....inches	1 x 2	1¼ x 2½	1½ x 3	2 x 4	2½ x 5
Each .....	33.00	42.50	53.50	72.00	96.00
Dia. Inlet Flange, (is extra heavy).....inches	....	....	....	6½	7½
" Outlet " (is Standard) .....	....	....	....	9	10
Size .....	3 x 6	4 x 8	5 x 10	6 x 12	8 x 14
Each .....	126.00	187.50	242.00	325.00	400.00
Dia. Inlet Flange, (is extra heavy).....inches	8¼	10	11	12½	....
" Outlet " (is Standard) .....	11	13½	16	19	....

### B805 STRAIGHT SIZES (Inlet and Outlets same Size)

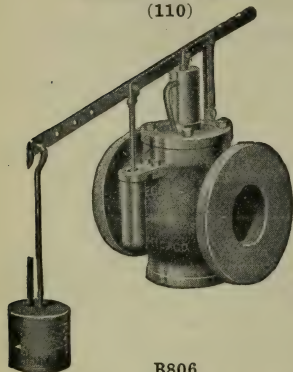
Sizes 1-inch to 12 inches use list prices B806.

The valve is two seated, so constructed that seats adjust themselves to any change of temperature. They are very sensitive and promptly respond to the slightest variation in pressure. Endorsed and used by all the companies installing vacuum systems of heating.



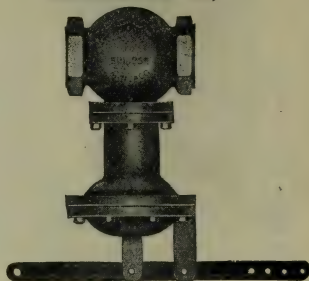
## "ECLIPSE" REDUCING VALVES AND PRESSURE REGULATORS

REDUCING VALVE  
(110)



B806

LOW PRESSURE  
REGULATOR (81)



B807

Always state pressure, also pressure you wish to reduce to.

### SCREWED AND FLANGED

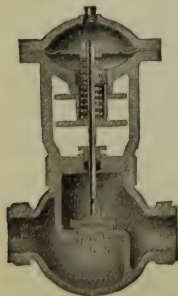
Size .....inches	1	1¼	1½	2	2½	3	3½	4
Each .....	23.00	24.00	25.00	30.00	35.00	42.50	52.50	60.00
*Flanges.....inches	.....	.....	.....	6	7	7½	8½	9
Size.....inches	4½	5	6	7	8	10	12	....
Each .....	70.00	75.00	100.	125.00	185.00	275.00	350.00	....
*Flanges.....	9¼	10	11	12½	13½	16	19	....

Larger sizes than 6 in. are made flanged only.

\* B806 Reducing Valve can be furnished **Extra Heavy**, with Flange Diameter same as Extra Heavy Flange Fittings at special price.

The B806 Reducing Valve is for reducing from boiler pressure not exceeding 125 pounds, to a pressure from 10 to 40 pounds on low pressure side; for reducing steam to lower pressures for dynamos or other manufacturing purposes, or for steamheating. For pressure above 125 pounds, special net prices on application.

B807 is also used with **Expanded Outlet**. Use same list as B805. B807 and B805 Valves are intended to reduce the steam pressure from boiler to any pressure between 1 pound and 15 pounds, and is especially adapted for use in buildings where a low pressure is desired.



B808

## "ECLIPSE" AUTOMATIC WATER, AIR, AND GAS REGULATOR

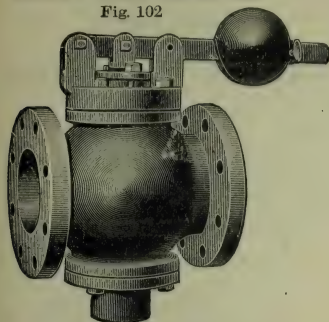
Use **List Price** at Top of Page.

State definitely the pressure carried and pressure to be reduced to. It is guaranteed to work perfectly.

# KIELEY PRESSURE REGULATING VALVES

## KIELEY HIGH PRESSURE

Fig. 102



B810

## EUREKA LOW PRESSURE

Fig. 101



B811

In ordering state clearly the pressures desired to be reduced from and to what.

## HIGH PRESSURE REGULATING VALVES—B810

For Reducing Steam or Air from the Initial or High Pressure down to any Pressure on the Reduced Side above 15 Pounds, that may be desired.

Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Screwed or Flanged...ea.	32.50	34.00	37.00	39.00	46.00	54.00	60.00	75.00
Face to Face...ins.	.....	.....	.....	.....	$6\frac{1}{4}$	$7\frac{1}{2}$	$8\frac{1}{2}$	$9\frac{1}{2}$
Size.....inches	4	5	6	7	8	9	10	12
Screwed or Flanged...ea.	90.00	116.00	156.00	200.00	260.00	380.00	380.00	550.00
Face to Face...ins.	$10\frac{1}{2}$	$11\frac{3}{4}$	$12\frac{3}{4}$	$13\frac{3}{4}$	$14\frac{3}{4}$	....	$16\frac{1}{2}$	$18\frac{1}{2}$

Sizes 2-inch and under have Screwed Ends,  $2\frac{1}{2}$ -inch and larger Flanged Ends.

**Diameter of Flanges** on these High Pressure Regulators can be furnished Standard or Extra Heavy. See Index for Flanges, Companion.

## EUREKA LOW PRESSURE REGULATOR—B811

For Reducing Steam, Air or Gas from the Initial or High Pressure down to any Pressure less than 15 Pounds, and from this point down to as low as 1 Pound.

Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Price.....each	26.00	28.50	31.00	32.50	39.00	45.50	52.00	65.00
Face to Face...ins.	....	....	....	....	6	$7\frac{1}{2}$	$8\frac{1}{2}$	$9\frac{1}{2}$
Size.....inches	4	5	6	7	8	9	10	12
Price.....each	78.00	97.00	130.00	175.00	227.00	350.00	350.00	470.00
Face to Face...ins.	$10\frac{3}{4}$	$11\frac{3}{4}$	$12\frac{3}{4}$	$13\frac{5}{8}$	$14\frac{5}{8}$	....	$16\frac{1}{4}$	....

Sizes 2-inch and under have Screwed Ends,  $2\frac{1}{2}$ -inch and larger Flanged Ends.

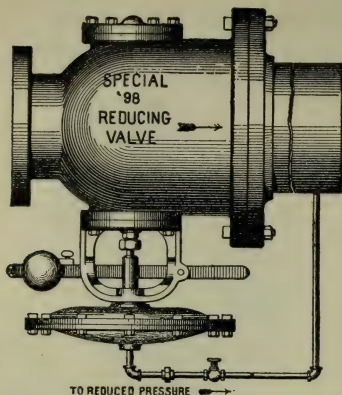
**Diameter of Flanges** same as Standard Companion Flanges; see Index.

## LOW PRESSURE REGULATOR (FIG. 107)—B812

Size.....inches	2x4	$2\frac{1}{2}$ x5	3x6	$3\frac{1}{2}$ x7	4x8	5x10	6x12
Each.....	60.00	70.00	100.00	13.000	160.00	200.00	300.00

**Flange Diameters**, same as Standard Flanged Fittings.

B812 is similar to B811 except the outlet is larger than the inlet opening. It is adapted for reducing Steam Pressure where no vacuum system is installed, or where it is desired to carry from 1 to 15 pounds on the heating system.



## KIELEY PRESSURE REGULATING VALVES

### SPECIAL "98" VACUUM PRESSURE REGULATORS

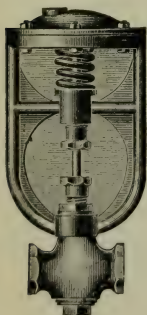
B815

Size.....inches	1 x 2	1¼ x 2½	1½ x 3	2 x 4	2½ x 5
Price.....each	33.00	42.50	53.50	72.00	96.00
Size.....inches	3 x 6	4 x 8	5 x 10	6 x 12	8 x 14
Price.....each	126.00	187.50	242.00	325.00	400.00

Can be furnished with inlet and outlet same size if desired.

**Flange Diameter** same as Standard Fittings. See index, Flanges, Companion.

Sizes, 1x2 to 2x4 inches, inclusive, made with small end screwed, all larger have flanged ends. Special "98" Regulators are for reducing steam pressures for heating purposes only, from that carried on boilers or steam heating mains down to a point of atmospheric pressure or below if desirable.



B816

### "SPECIAL 1900" PRESSURE REGULATING VALVES

Size.....inches	¾	1	1¼	1½	2
Each.....	26.00	28.50	31.00	32.50	39.00

**DIRECTIONS.**—Connect initial pressure to end marked inlet and from some point on reduced side or pressure to be governed run a ¼ pipe connection with valve to and connect with diaphragm. It is desirable to have this connection at diaphragm rise up not less than 6 inches. Regulate pressure by hand wheel immediately above spring. Compress spring to increase and relax to decrease pressure.

In ordering it is especially important that you state clearly the pressure desired to be reduced from and to what.

This valve is intended for reducing pressure of 125 pounds or less to from 1 to 50 pounds. They are provided with renewable composition valve discs which when worn out can be readily replaced at a cost of but a few cents.

They will be found especially desirable in situations where it is required to locate regulating valve close up to steam appliance or apparatus upon which reduced pressure is to be employed.

**SIZES**

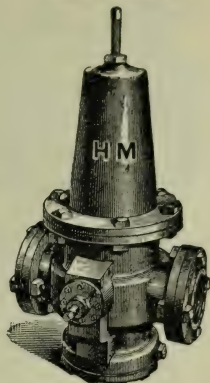
$\frac{1}{2}$  in. to  $2\frac{1}{2}$  in.



B817

**MUELLER  
WATER PRESSURE  
REGULATORS**

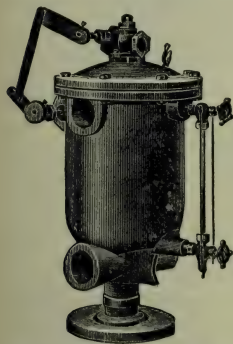
**LARGE SIZES**



B818

Size..inches	$\frac{1}{2}$ - $\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	6	8
Regular...ea.	10.00	13.00	17.50	24.00	40.00	55.00	70.00	90.00	150.00	225.00
Special... "	12.00	15.00	20.00	28.00	46.00	63.00	80.00	105.00	170.00	265.00

The special regulator is capable of adjustment to lower pressures. Can be adjusted to zero.



**MUELLER  
CONDENSATION RECEIVER AND  
AUTOMATIC PUMP REGULATOR**

B819

These Receivers and Regulators are very suitable where it is desired to place the automatic governing apparatus some distance from pump, or on different levels from steam pumps.

Number.....	0	1	2	3	4
Steam Pipe.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Pipe Sizes .....	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
Capacity Sq. ft. Radiation.....feet	5,000	10,000	20,000	30,000	40,000
Each .....	70.00	100.00	130.00	150.00	200.00



**ECLIPSE PUMP REGULATOR****B820**

For fire, tank, elevator, air and water works pumps.  
The Regulator is adjusted by spring, and not liable to be handled and changed.  
This Regulator is guaranteed to work perfectly.



Size.....inches	1	1¼	1½	2	2½	3
Each.....	30.00	35.00	42.00	50.00	60.00	75.00
Size.....inches	4	5	6	8	10	12
Each.....	100.00	135.00	180.00	250.00	400.00	500.00

Give Steam pressure, what pressure is desired to be carried on Main, or height of tank if for tank service.

**FISHER GOVERNORS****PUMP GOVERNOR—B821**

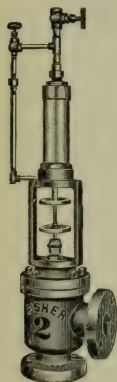
For controlling steam pumps, pumping into pipes against pressure.

**GRAVITY GOVERNOR—B822**

For controlling steam pumps, discharging into an elevated tank.

**PUMP GOVERNOR—B821**

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Screwed ..each	25.00	27.50	30.00	35.00	42.50	50.00	58.00	70.00
Size.....inches	2	2½	3	3½	4	5	6	
Flgd. ea., including Flgs.	50.00	60.00	75.00	87.50	100.00	125.00	150.00	

**GRAVITY GOVERNOR—B822**

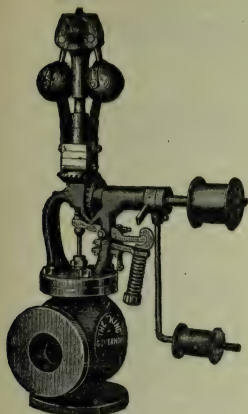
Size.....inches	1	1¼	1½	2	2½	3	3½	4	5
Screwed .....each	40.00	45.00	52.50	60.00	68.00	.....	.....	.....	.....
Flanged, each, including Flanges.....	70.00	85.00	97.50	110.00	135.00	.....	.....	.....	.....

**DAVIS COMPETITION PUMP GOVERNOR—B823**

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Each.....	25.00	25.00	30.00	35.00	42.00	50.00	60.00	75.00
Size.....inches	3½	4	5	6	7	8	10	....
Each.....	85.00	100.00	125.00	150.00	175.00	200.00	250.00	....

This in effect is the Davis Balanced Valve with the addition of a device by means of which the admission of steam to the pump cylinder is controlled by the pressure from the discharge end. The lever is weighted similar to No. 1 Davis Pressure Regulator, and the lever is also controlled by a brass dash pot and brass water cylinder, both attached to body of valve and hanging below the lever.

## KING



B824

## ENGINE GOVERNORS

Illustration shows King Governor with Automatic Stop.

The price list given below also applies to Monarch, Sensative, Gardner, Judson, Pickering, and other standard makes of Governors.

Class A are with Automatic Stop; Class B are without Stops.

All the above makes of Governors are made with or without Automatic Stops.

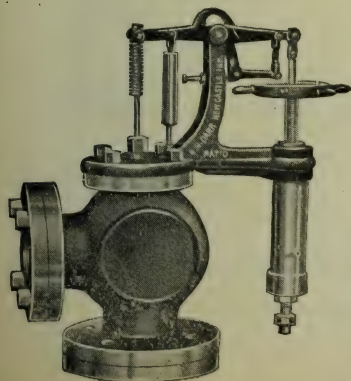
The Hoosier Governor can be adjusted while running to change speed of engine. Use list below.

Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$
Price, Plain.....each	18.00	20.00	22.00	25.00	30.00	35.00
“ Finished.....“	20.00	22.00	25.00	29.00	34.00	40.00
“ Automatic Stops, Extra...“	2.00	3.00	3.50	4.50	6.00	7.00

Size.....inches	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
Price, Plain.....each	40.00	50.00	60.00	71.00	83.00	94.00
“ Finished.....“	45.00	58.00	69.00	81.00	94.00	106.00
“ Automatic Stops, Extra...“	8.00	9.00	11.00	12.00	13.00	15.00

In ordering Governors, state which Class is wanted, whether Standard or Spring, Plain or Finished, and with or without Globe or Angle Stop Valve; also, whether inlet and outlet are wanted screwed or flanged, and state diameter of flanges.



## CARR PUMP GOVERNOR

For Water Works Pumps, Hydraulic Elevator Pumps, Boiler Feed Pumps, Fire Pumps, and Air Compressors

B825

2-Inch and larger is with Speed Controller.

Size.....ins.	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Dimensions.....	$2\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{2}$	4	$4\frac{1}{2}$
Each.....	27.50	30.00	35.00	42.50	52.50

Size.....ins.	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5
Dimensions.....	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	8
Each.....	60.00	75.00	87.50	100.00	125.00

## IMPROVED CLIMAX DAMPER REGULATOR

Can also be Fitted as a

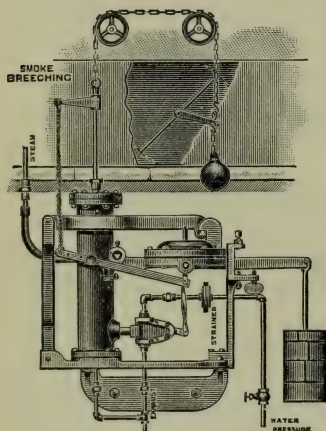
### THROTTLE OR STEAM VALVE CONTROLLER

For Mechanical Draft Systems, or as

### AUTOMATIC RHEOSTAT CONTROLLER

For Electric Power Pumps

Price, \$150.00

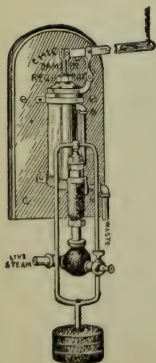


B826

As a Damper Regulator, will control one or more dampers, either singly or in battery formation, large or small sizes,—controlling the damper according to the rise or fall of steam pressure.

As a Throttle Controller it controls the speed of Fan Engine on forced or mechanical draft systems, by gradually opening or closing the throttle according to steam pressure in boilers.

As a Rheostat Controller it controls Electric Power Pumps on all services.



B829

## DAVIS

### HIGH PRESSURE DAMPER REGULATOR

Price, with Chains, Pulleys, and necessary attachments, complete .....	each	50.00
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### LOW PRESSURE DAMPER REGULATORS

Come under head of Heating Boilers, etc.

BRASS,  
Wheel Top



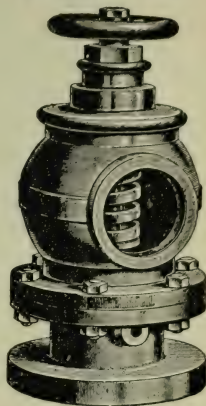
B840

## WATER RELIEF VALVES

Be sure to state pressure valves are to blow off at. When used as a cylinder relief valve, should be set to relieve at 10 to 15 pounds higher than the working pressure.

Brass Valves can be furnished with plain top without wheel, if desired, for engine cylinders.

IRON BODY,  
With Bronze Seats



B841

### BRASS WATER RELIEF VALVE

Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed .....each	10.00	12.00	15.00	20.00	30.00	45.00	60.00

### IRON BODY, SCREWED AND FLANGED

Size..... inches	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
One Adjustment.....	30.00	40.00	50.00	60.00	75.00	90.00	110.00	140.00
Two ".....	40.00	50.00	60.00	70.00	85.00	105.00	130.00	160.00

With two adjustments of given pressure, one set say at 40 lbs., and the other set at 200 lbs. The valve can be changed in a moment to blow off at either of these pressures, or any intermediate pressures.



## LOW PRESSURE POP VALVE

B842

For House Heating Steam Boilers, for Pressures not Exceeding 20 Pounds

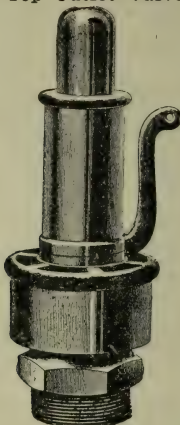
Size...ins.	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Each.....	7.00	8.00	9.00	10.00	15.00	40.00



## STANDARD BRASS POP SAFETY VALVES

Standard valves regularly carried in stock are set at 90 to 100 pounds.

Top Outlet Valve



B843

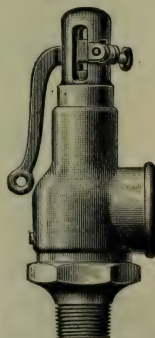
Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Boiler.....H. P.	3	3-6	3-10	10-20	20-30	30-40	40-75	75-100
Standard Top Outlet ea.	8.00	10.00	12.00	15.00	20.00	30.00	50.00	65.00
Road Engine, Muffled, no lever "	.....	.....	25.00	30.00	35.00	45.00	.....	.....

Side Outlet same list.



B844—Top Outlet

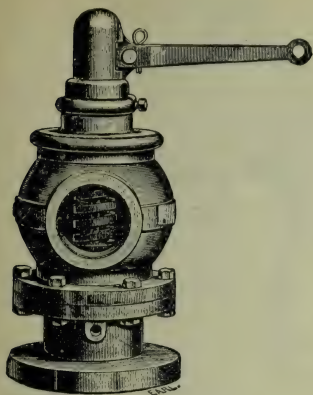
## LUNKENHEIMER BRASS POP SAFETY VALVES



B845—Side Outlet

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Top Outlet.....each	5.50	6.00	6.50	7.50	9.00	11.50	18.00	28.00	38.00
Angle "....."	6.00	6.50	7.00	8.20	9.80	12.40	19.50	30.00	41.00

Pop Valves are ordinarily carried in stock set to pop at 100 pounds pressure. Can be set at any desired pressure; if above 175 pounds, a heavier valve should be used.



## IRON BODY POP SAFETY VALVES

**B849**

Can be furnished Vertical pattern, from factory with outlet looking straight up.  
Encased Spring Valves quoted on application.

NOTE.—When ordering always state pressure valve is wanted to blow off at.

## SCOTT PATENT MARINE AND STATIONARY LOCK-UP POP SAFETY VALVE

Iron Body, Phosphor Bronze Seats

Pipe Size.....inches	2	2½	3	3½	4	4½	5	6
Screwed or Flanged...each	40.00	50.00	60.00	75.00	90.00	100.00	110.00	140.00

Extra Heavy Improved Pop Valve for Water Tube Boilers—use above list.  
Discount on application.

Regularly made these valves are all both screwed and flanged on the base. Made with Hexagon screwed base if desired.

## IRON BODY POP SAFETY VALVES

AMERICAN Valve List, also CROSBY Valve List

Always state pressure they are to be set at.

Screwed and Flanged

Pipe Size.....inches	2	2½	3	3½	4	4½	5	6
American Plain...ea.	30.00	50.00	65.00	80.00	100.00	115.00	125.00	180.00
Crosby " " " " " "	30.00	50.00	65.00	80.00	100.00	125.00	160.00	250.00
For Boilers.....H. P.	30-40	40-75	75-100	100-125	125-150	150-175	175-200	225 & up
Diam. Base Flange, Scr. ins.	.....	.....	.....	.....	.....	.....	.....	.....

Can furnish with Nickel seat at small additional cost.

Lock-up attachment if wanted is extra.

American "Special" Pop Valve with Straight Lever for Water Tube Boilers, use above list. Discount quoted on application.

## LUNKENHEIMER IRON BODY, BRASS MOUNTED POP VALVES

When ordering state pressure at which valve is to be set.

Regular Pattern Size...ins.	2	2½	3	3½	4	4½	5	6
Screwed or Flanged...ea.	22.00	32.00	40.00	56.00	72.00	84.00	140.00	175.00
Suitable for Boilers...H. P.	50	70	100	125	150	175	200	300

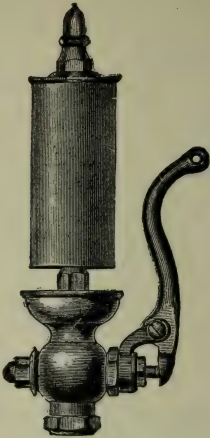
Base Flanges same diameter as Extra Heavy Fittings.

Special Encased Spring Valve, use above list. Discount on application.

The seat and disc are of the best bronze composition. We can furnish these valves with nickel seats. All valves have lock attachment.

STANDARD  
STEAM

With Valve and



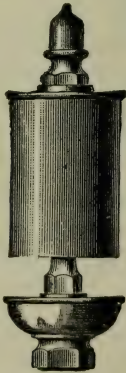
BRASS  
WHISTLE

Adjustable Lever

B851

Diam. Bell . . . ins.	1	1¼	1½	2	2½	3	3½	4	5	6	8
Size Pipe..ins.	¼	¾	¾	¾	¾	1	1	1¼	1½	2	2½
Price ....each	3.10	3.75	4.00	5.50	6.50	8.50	11.50	15.00	22.50	33.00	95.00

PLAIN WHISTLE



WITHOUT VALVE

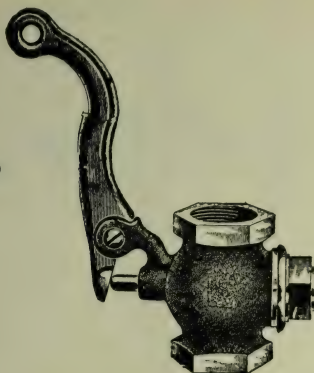
B852

Diam. Bell . . . ins.	1	1¼	1½	2	2½	3	3½	4	5	6	8
Size Pipe..ins.	¼	¼	¾	½	½	¾	1	1¼	1½	2	2½
Price ....each	2.20	2.75	3.00	4.35	5.25	7.25	9.50	12.00	19.00	24.00	70.00

Larger sizes made to order.

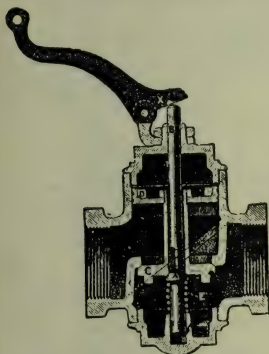
**STANDARD  
BRASS**

**WHISTLE  
VALVE**



**B853**

Size .....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Price .....each	2.00	2.50	3.00	3.50	5.00	6.00	9.00	18.00	27.00



**AUTOMATIC BALANCED  
WHISTLE VALVE**

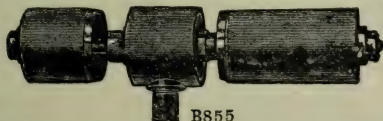
**B854**

Brass, Screwed .....inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Each .....	18.00	22.20	26.60
Brass, Screwed .....inches	2	$2\frac{1}{2}$	3
Each .....	35.50	44.40	62.20

The Automatic Balanced Whistle Valve is so constructed that a slight pressure on the lever opens a small auxiliary valve and allows the steam pressure itself to open the main valve. As soon as the lever is released the valve closes.

**IRON GONG WHISTLES**

Makes an Entirely Different Sound from Ordinary Whistles  
Can be Heard Distinctly from Six to Eight Miles



**B855**

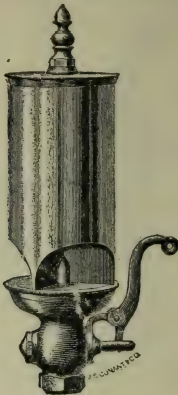
Diameter of Bell.....inches	4	6	8	10	12
Size of Pipe.....inches	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Price.....each	12.00	16.00	20.00	30.00	50.00

Prices are without Valve and Pipe.



No. 3—WITH SIDE VALVE

SINGLE  
CHIME



BELL  
WHISTLE

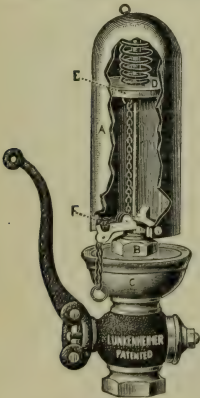
B856

Diameter of Bell. in.	2	3	4	5	6	8	10	12
Size of Pipe.....in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
No. 3, with Valve. ea.	8.00	14.00	20.00	35.00	50.00	110.00	210.00	300.00
No. 1, less " " "	5.00	9.50	15.00	28.00	42.00	95.00	190.00	280.00

Can be furnished with Automatic Balanced Valve B854 at special price.

MOCKING BIRD WHISTLE

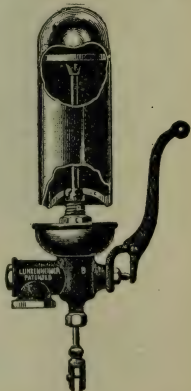
FIRE ALARM WHISTLE



B857

The peculiar merit of the Single Bell Chime Whistle consists in producing three distinct tones pitched to the first, third and fifth of the common musical scale, which harmonize and give an agreeable musical chord. It is more penetrating than the common whistle, and can be heard at a greater distance. It effectually destroys the harsh, disagreeable noise which has been a source of common complaint in other whistles and gongs.

The Mocking Bird and Fire Alarm Whistles can be made to produce a variable sound by means of the piston in bell, which can be moved up and down—in the one by means of the chain, in the other by the sliding rod.

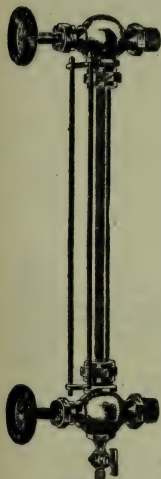


B858

Diameter of Bell.....inches		2 1/2	3	3 1/2	4	5	6	8
Mocking Bird	{ Brass with Valve.....ea.	10.50	14.00	20.00	28.	40.	56.	....
	{ " less " " " " "	9.00	12.00	17.50	25.	37.	50.	....
Fire Alarm	{ Brass with Valve....."	24.00	.....	31.00	....	40.	....	100.
	{ Iron Base with Valve "	30.00	.....	40.00	....	53.	....	120.

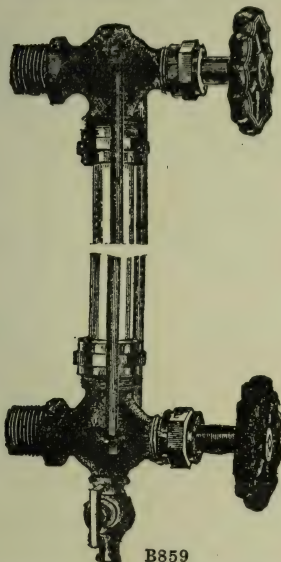
## WATER GAUGES

FINISHED  
ROUND BODY  
Wood Wheel  
Two Rod



B860

ROUGH BODY—Iron Wheels



B859

FINISHED  
SQUARE BODY  
Wood Wheel  
Four Rod



B861

Size Glass .....	$\frac{5}{8}$ x10 or 12 in. $\frac{1}{2}$ inch		$\frac{5}{8}$ x14 in. $\frac{1}{2}$ inch		$\frac{3}{4}$ x14 in. $\frac{3}{4}$ inch		$\frac{3}{4}$ x16 in. $\frac{3}{4}$ inch	
Pipe Thread .....								
	2 rod	4 rod	2 rod	4 rod	2 rod	4 rod	2 rod	4 rod
B859 Rough, Iron Wheels....	3.00	.....	3.25	.....	4.50	.....	4.50	.....
B860 Finished, Wood " ....	4.25	5.00	4.50	5.25	5.50	6.25	5.50	6.25
B861 " " " " ....	5.50	6.00	5.75	6.25	7.25	7.75	7.50	8.00

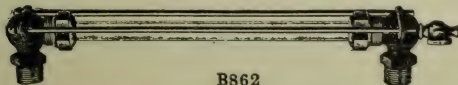
**Special Drip Cock**, with Thread on Outlet End, can be furnished at special price.

**Special. Light Gauges** with  $\frac{1}{2}$ -in. x 10 or 12-in. Glass, and  $\frac{3}{8}$ -inch pipe size threaded shank, 2 Rod.

Deduct from  $\frac{3}{8}$  x 10-inch list, B859, 25c.; from B860, 50c.; from B861, 75c.

## ROUGH BRASS TANK GAUGE

Without Valves

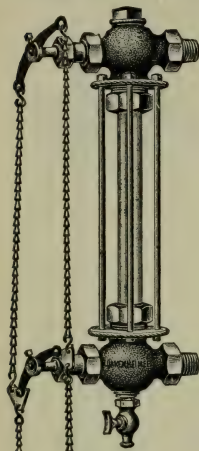


B862

Size  $\frac{3}{8}$  x 10 or 12-inch Glass,  $\frac{1}{2}$ -inch threaded (pipe size) shank, \$2.60.

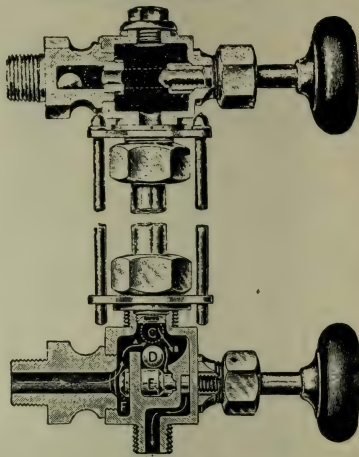
## SPECIAL WATER GAUGES

## QUICK CLOSING GAUGE



B863

## AUTOMATIC GAUGE



B864

With Three Guards				Size No.	Num-ber of Guards	Size of Glass	Pipe Thread Shank	Price
Size.....	½-in. Glass *½-in. Thread	⅝-in. Glass *⅜-in. Thread	¾-in. Glass *¾-in. Thread					
Rough Body...ea.	10.50	11.50	13.50	41	2	⅝ x 10	½ in.	11.00
Finished Body "	13.00	14.00	16.50	43	4	⅝ x 12	½ "	12.00
				45	4	⅝ x 14	½ "	12.25
				47	4	¾ x 14	¾ "	12.75
				49	4	¾ x 16	¾ "	13.00

**B863**—Gauges are sent with rods and glass for 18-inch or less centres. State length desired. Larger than 18-inch can be furnished at special price. Chain is included in price.

\*Thread is pipe size.

**B864**—Any size can be furnished with only 2 rods. Deduct from 4-rod list 75c. The automatic device or ball "D" is moved and agitated every time handle is turned and gauge glass blown out, and cannot, therefore, become stuck fast by sediment.

It is impossible for the devices to go to their seats except when glass breaks.

## BRASS GUARDS

For Water Gauges

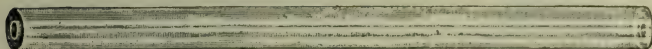


B865

Length .....	inches	12	14	16	18
Price .....	net each	.07	.08	.12	.15

Longer guards to order.

# GAUGE GLASSES



B866

## PRICE PER DOZEN

Length.....in.	10	11	12	13	14	15	16	17	18
$\frac{1}{8}$ and $\frac{3}{8}$ in.....	3.00	3.24	3.60	3.84	4.20	4.44	4.80	5.04	5.40
$\frac{3}{4}$ inch.....	3.60	3.96	4.32	4.80	5.16	5.52	5.88	6.24	6.60
Length.....in.	19	20	22	24	30	36	48	60	72
$\frac{1}{2}$ and $\frac{5}{8}$ in.....	5.64	6.00	6.60	7.20	9.00	10.80	14.52	18.12	21.84
$\frac{3}{4}$ inch.....	7.08	7.44	8.16	8.88	11.16	13.44	18.00	22.56	27.12

$\frac{7}{8}$  inch, 1 inch, and  $1\frac{1}{4}$  inch special.

Red Reflecting Gauge Glasses quoted on application.

## GLASS TUBE CUTTERS

CHESTERTON

FAVORITE



B867

B868

Each, \$2.50.

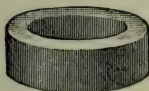
Each, \$0.50.

## RUBBER GAUGE GLASS WASHERS

SQUARE  
CUT

ROUND  
MOULDED

GILBERT'S SELF-PACKING  
GAUGE GLASS PRESERVER



B869

B870

B871

$\frac{1}{8}$ inch .....per doz.	.18	$\frac{1}{2}$ inch .....per doz.	.20	$\frac{1}{8}$ inch, $\frac{3}{8}$ inch or $\frac{3}{4}$ inch, 1 Doz. in a box	1.20
$\frac{3}{8}$ " ..... "	.20	$\frac{3}{8}$ " ..... "	.25	Price .....per box	
$\frac{3}{4}$ " ..... "	.25	$\frac{3}{4}$ " ..... "	.30	Other Sizes Special	
Price.....per pound	1.50	Price.....per pound	2.50		

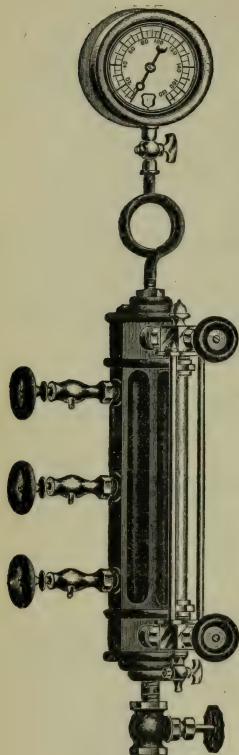
## RAINBOW GAUGE GLASS WASHERS

Size.....inch	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{4}$
Price.....per gross	5.00	5.50	6.00

Packed 1 gross in a box.



## COMBINATION WATER AND STEAM GAUGES



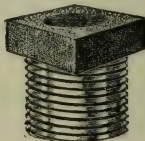
B873

Number.....	1	2	3	4
Iron Bodies only..... each	2.75	4.00	6.00	8.00
<b>Centre to Centre</b>				
Boiler Connections.....in.	10	12½	14	18
Water Gauge Connections.. “	10	12½	14	18
Gauge Cocks..... “	3⅞	3¾	4½	4
<b>Size Tapped</b>				
Boiler Connections.....in.	½	¾	1	1¼
Water Gauge..... “	½	½	¾	¾
Gauge Cocks..... “	¾	½	¾	¾
Top and Bottom..... “	½	½	¾	1¼
Extreme Length..... “	13	16½	18¾	22½

## TRIMMINGS

Gauge Cocks, Water Gauges, Steam Gauges, Syphons, Valves, etc., are extra. See other pages, see Index.

## FUSIBLE PLUGS



B874

Size.....	each
½-inch.....	.60
¾ “.....	.75
1 “.....	1.00
1¼ “.....	1.50
1½ “.....	2.00
2 “.....	3.00

## WILLIAMS SAFETY FEED WATER REGULATORS

See page 187.

No. 1—Suitable for Return Tubular, B. & W., Edge Moor, National, Abdenroth & Root, Robb-Mumford, Berry, Wheeler, Parker, Geary, Cahall Horizontal and most forms of horizontal boilers.

No. 2—Suitable for Heine, Franklin, Keeler, Erie and small units of Stirling.

No. 3—Suitable for Stirling, Scotch-Marine, Wickes Vertical, Manning, Hyde and Hazelton.

No. 4—Suitable for Cahall Vertical, Climax, Tudor Vertical and all vertical boilers built in large units.

Auxiliary—The Auxiliary Regulator is applicable to any style, type or size of boiler. Blue prints showing method of attaching furnished on application.

Also Styles “A,” “E,” and “F” for Sterling Boilers only. \$100.00.

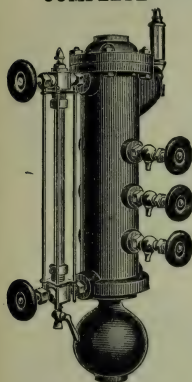
“Junior,” for small vertical and horizontal units, from 5 to 80 H. P., \$90.00.

The above prices include controlling valves 2 inches and less; for larger valves, \$5.00 for each ½ inch above 2 inches. Gauge Cocks and Water Gauge extra per column, \$5.00.

Auxiliary is a short pattern regulator, without gauge cocks or water gauge, intended for use in connection with an independent column.

# SAFETY WATER COLUMNS

HIGH AND LOW  
WATER ALARM,  
COMPLETE



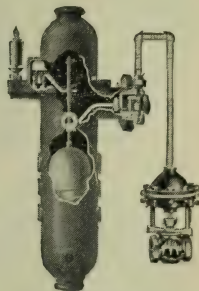
B880

LOW WATER ALARM,  
SECTIONAL



B881

COMBINED WITH  
FEED WATER  
REGULATOR



B882

	Number of Column	Kind and Size of Boiler, Inches	Variation Between Alarms, Inches	Price, Columns Only, Each	Price, Water Gauge and Gauge Cocks	Steam and Water Connections	Blow Off	Water Gauge	Gauge Glass	Gauge Cocks, Centers	Gauge Cocks	Diameter of Column
HIGH AND LOW	1	36 to 54	6	28.00	7.00	1	1/2	1/2 x 14	5/8 x 12	3	1/2	3 3/4
	1 1/2	36 " 54	6	28.00	7.00	1 1/4	3/4	1/2 x 14	5/8 x 12	3	1/2	5
	5	54 " 72	8	30.00	10.00	1 1/4	3/4	3/4 x 18	3/4 x 16	4	3/4	4 1/4
	7	Water Tube	12	35.00	10.00	1 1/2	3/4	3/4 x 21	3/4 x 19	6	3/4	5 1/4
	9	Vertical	18	40.00	10.00	1 1/2	1	3/4 x 26 1/2	3/4 x 24	9	3/4	5 1/4
	11	"	24	42.00	12.50	1 1/2	1	3/4 x 32 1/2	3/4 x 30	12	3/4	5 1/4
	13	"	30	45.00	20.00	1 1/2	1	3/4 x 38 1/2	3/4 x 36	10	3/4	5
	15	"	36	50.00	20.00	1 1/2	1	3/4 x 44 1/2	3/4 x 42	12	3/4	5
LOW	2	36 to 54	....	25.00	7.00	1	1/2	1/2 x 14	5/8 x 12	3	1/2	3 3/4
	6	54 " 72	....	28.00	10.00	1 1/4	3/4	3/4 x 16	3/4 x 14	4	3/4	4 1/4
	8	Vertical	....	35.00	10.00	1 1/2	3/4	3/4 x 21	3/4 x 19	6	3/4	5 1/4

Nos. 13 and 15, two glasses joined at center with stuffing box. Four gauge cocks.

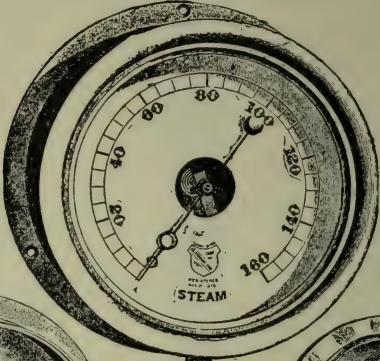
## COMBINED FEED WATER REGULATORS

Number .....	1	2	3	4	*Aux- iliary
Price, without Trimmings.....	100.00	100.00	110.00	110.00	70.00
Variation Between Alarms.....Inches	6	6	10	12	.....
Steam and Water Connections....."	1 1/4	1 1/4	1 1/2	1 1/2	1 1/4
Water Gauge Centers....."	16	16	20	24	.....
Gauge Cock....."	3	3	5	6	.....
Height Over All....."	32 1/3	32	45	40	17 1/2
Outside Diameter....."	6 3/4	6 3/4	6 3/4	7 3/4	6 3/4

Above regulators suitable for boilers, see page 183.

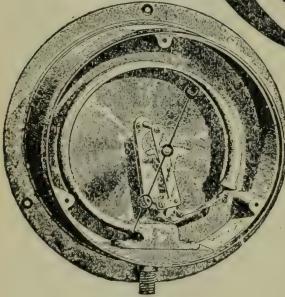
BOURDON SPRING GAUGES

DIAL OF PRESSURE GAUGE

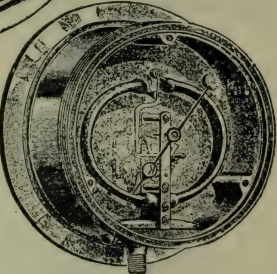


SINGLE SPRING

DOUBLE SPRING



B884



B885

B883

3¼-inch and 5-inch Pressure Gauges with Dial marked 15, 30, 50, 100, 160, 180, 200 or 300 pounds; also 5-inch Vacuum Gauges kept in stock; also 500 lbs. special pressure. Prices include cock.

Dial should be graduated to about double the working pressure.  
Gauges not warranted unless properly connected by syphon.  
Also a **Special 500-Pound 5-inch iron case Single Spring gauge** at a special net price.

**B884—SINGLE SPRING GAUGES—300 Pounds Pressure or Less**

Price list applies to either **Pressure Gauge or Vacuum Gauge.**

Size Dial . . . . . inches	2-2½-3	3½	4½	5	5½	6	6¾	8½	10	12
Iron Case, Brass Ring . . . . . ea.	6.00	7.00	8.00	8.00	10.00	13.00	16.00	22.00	32.00	50.00
Brass Case . . . . . "	8.00	9.00	10.00	11.00	12.00	16.00	20.00	30.00	40.00	75.00
" Deep Case . . . . . "	9.25	10.25	11.50	12.50	13.75	18.50	23.00	33.50	44.00	80.00

The deep case gauges have either O. G. or Octagon rings.

**B885—LOCOMOTIVE AND STEAM FIRE ENGINE GAUGES**

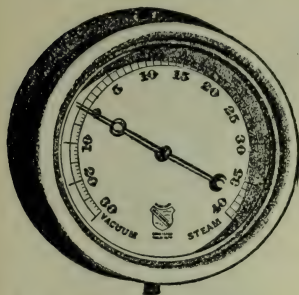
**With Double Bourdon Spring.** Prices including cock. (Stock size 5-inch 200 lbs.)

Size Dial . . . . . inches	4½	5	5½	6	6¾	8½	10	12
Iron Case, Brass Ring . . . . . each	10.00	11.00	12.00	15.00	18.00	25.00	37.00	55.00
Brass Case . . . . . "	12.00	13.00	14.00	18.00	22.00	34.00	45.00	80.00
" Deep Case . . . . . "	13.75	15.00	16.25	20.75	25.00	37.50	49.00	85.00

**Ammonia Gauges** showing pressure and vacuum quoted on application.

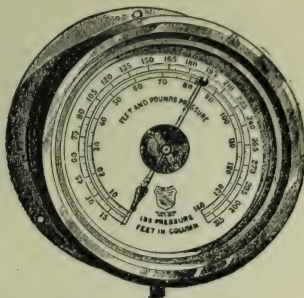


COMPOUND PRESSURE AND  
VACUUM GAUGE



B886

COMBINATION WATER  
PRESSURE



B887

**B886—COMPOUND PRESSURE AND VACUUM GAUGE**  
For Compound Engines

Diameter of Dial.....inches	3½	4½	5½	6	6¾	8½	10	12
Iron Case.....each	10.00	12.00	14.00	16.00	20.00	30.00	40.00	60.00
“ “ Nickel Plated Ring “	10.18	12.20	14.25	16.50	20.60	30.75	41.00	61.50
Brass Case.....“	12.00	14.00	16.00	20.00	25.00	40.00	50.00	80.00
Nickel Plated Case.....“	12.75	15.00	17.25	21.50	27.00	42.50	53.00	84.00
Brass Deep Case, O. G. or Oct. Ring.....extra	1.75	2.00	2.50	3.00	3.00	3.50	4.00	5.00

Gauges not warranted unless properly connected with a syphon.

**B887—COMBINATION WATER PRESSURE GAUGE**

Showing pressure, and feet in column of water. Springs of solid drawn seamless tube.  
For Water Works, Pumping Stations, Mines, etc.

Size of Dial.....inches	5½	6	6¾	8½	10	12
Iron Case.....each	14.00	16.00	20.00	30.00	40.00	60.00
“ “ Nickel Plated Ring.....“	14.25	16.50	20.60	30.75	41.00	61.50
Brass Case.....“	16.00	20.00	25.00	40.00	50.00	80.00
Nickel Plated Case.....“	17.25	21.50	27.00	42.50	53.00	84.00
Brass Deep Case, O. G. or Octagon Ring...extra	2.50	3.00	3.00	3.50	4.00	5.00

This gauge does not require a syphon.

**DEEP CASE STEAM VACUUM AND BACK PRESSURE  
GAUGE—Single Spring or Double Spring Quoted on Application**



B889

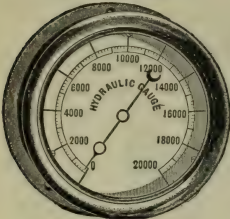
**ALTITUDE GAUGES**

Registering height of water in elevated tank.  
Stock Size is 5-inch Iron Case.

Size Dial.....inches	3½	4, 4½, 5	6	6¾	8½
Iron Case, Brass R...ea.	10.00	12.00	16.00	20.00	30.00
“ “ N. P. “ “	10.18	12.20	16.50	20.60	30.75
Brass “ “ “ “	12.00	14.00	20.00	25.00	40.00
“ “ N. P. “ “	12.75	15.00	21.50	27.00	42.50

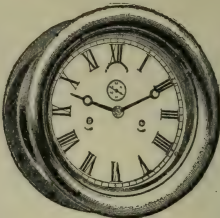


HYDRAULIC  
Steel Spring



B890

ENGINE ROOM CLOCKS



B891

TEST GAUGE  
Single Bourdon Spring



B892

Quoted on application.

B890—HYDRAULIC GAUGE

Shows pounds per square inch, and tons on ram.

Size Diameter of Dial.....inches	3½	4½	5	6	6¾	8½	10	12
Iron Case, Brass Ring.....each	22.00	25.00	30.00	35.00	50.00	70.00	90.00	110.00
“ “ Nickel Plated Ring..... “	22.50	25.50	30.50	35.50	50.60	70.75	91.00	111.50
Brass “..... “	26.00	30.00	35.00	40.00	60.00	80.00	100.00	125.00
Nickel Plated Case..... “	26.75	31.00	36.00	41.50	62.00	82.50	103.00	129.00
Maximum Hand.....each	5.00							
Hydraulic Cock..... “	8.00							
“ Check Valve..... “	6.00							

In these gauges a steel tube, bored from a solid bar, is substituted for the seamless brass tube for all pressures over 800 pounds per square inch. Hydraulic gauges should be connected with a check valve.

B892—BRASS CASE STANDARD TEST GAUGE

Springs of Solid Drawn Seamless Tube. Scaled in one pound marks. Graduated by open mercury column.

Size of Dial..... inches	3	3½	4½	5½	6	6¾	8½	10
Brass Case.....each	14.00	14.00	16.00	20.00	25.00	30.00	40.00	50.00
Nickel Plated Case..... “	14.60	14.75	17.00	21.25	26.50	32.00	42.50	53.00

Gauges not warranted unless properly connected with a syphon.

STEAM GAUGE SYPHONS

Iron

Brass



B893

Each, 50c.



B894



B895

GAUGE  
HAND PULLER



B896

B894—B895

B896

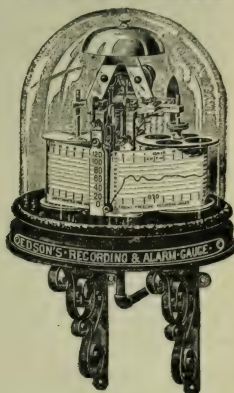
Straight, Plain.....each	1.00	No. 1 for 8½-inch and Smaller Gauges.....each	1.50
“ with Cock..... “	1.50	No. 2 for Larger Gauges..... “	3.00
Angle Pattern.....add	.25		

# PRESSURE RECORDING GAUGES

EDSON No. 1 ALARM



B898



B899

## PRICE LIST—B898

Nickel Plated, with Ink and 100 Charts.....	each	50.00
With Electric Alarm Attachment, Extra.....	"	10.00
Additional Charts.....	per hundred	.75
" " Printed with Copying Ink.....	"	.85
Special Ink.....	per bottle	.25

## EDSON PRESSURE RECORDING AND ALARM GAUGES

Number.....	1		2		3
Description...	High or Low Pressure Alarm	High and Low Pressure Alarm	High or Low Pressure Alarm To Ring at a Distance	High and Low Pressure Alarm To Ring at a Distance	No Alarm
Price.....each	85.00	90.00	80.00	85.00	75.00

Prices include one year's supply of Charts and Album for filling same.

## STEAM GAUGE COCKS

TEE HANDLE, FEMALE



B900

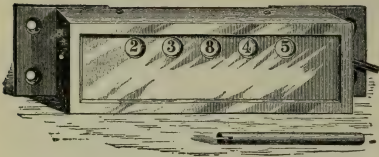
LEVER HANDLE WITH UNION



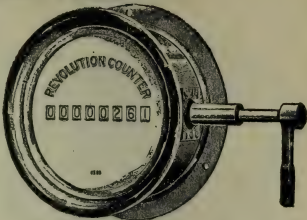
B901

Size.....inch	$\frac{1}{4}$	Size.....inch	$\frac{1}{4}$
Finished.....each	.50	Finished.....each	1.50
Nickel Plated....."	.75	Nickel Plated....."	2.00

REVOLUTION COUNTERS



B902



B903

SQUARE CASE REVOLUTION COUNTERS

Size.....inches	4½x1¾	5x1¾	5½x1¾	6x1¾	7x2½	8x2½	9x2½	10x2½
Number of Figures..	4	5	6	7	4	5	6	7
Each, Plain .....	17.50	20.00	24.00	28.00	20.00	24.00	28.00	32.00
“ Resetting.....	21.50	24.00	28.00	32.00	24.00	28.00	32.00	36.00

Register 4 fig. 10,000, 5 fig. 100,000, 6 fig. 1,000,000, 7 fig. 10,000,000.

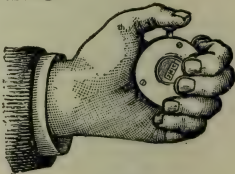
ROUND CASE REVOLUTION COUNTERS

Size Dial .. ..inches	12	10	8½	12	10	8½	6¾
Number of Wheels .....	8	8	8	6	6	6	6
Price, Brass Deep Case...ea.	110.00	95.00	80.00	100.00	85.00	70.00	60.00
“ Nickel-Plated Deep Case “	114.00	98.00	82.50	104.00	88.00	72.50	62.00

HAND COUNTERS



B904



B905

Price each, \$3.00.

SPEED INDICATORS

SINGLE SPEED



B906

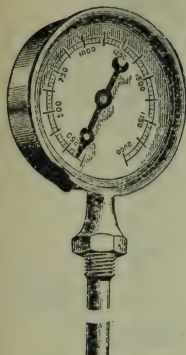
REGISTERING



B907

B906—With Plain Cap .....	each	1.00
“ Split “ .....	“	1.15
High Speed Indicator.....	“	1.25
B907—Price .....	“	3.00
In Leatherette Case .....	“	3.50

VERTICAL



B908

PYROMETERS

For Blast Furnaces, Ovens, Stills,  
Boiler Flues, Chimneys, Etc.

PRICE, 6-INCH DIAL

Brass Case .....	each	30.00
Iron   "            "		25.00

These pyrometers have  $\frac{3}{4}$  inch pipe connections, and can be furnished for temperatures up to 2,000° Fahrenheit.

Unless specially made, the entire length of stem should be inserted in the heat.

When ordering, please state for what purpose desired; height of temperature required; length of stem, whether wanted horizontal or vertical.

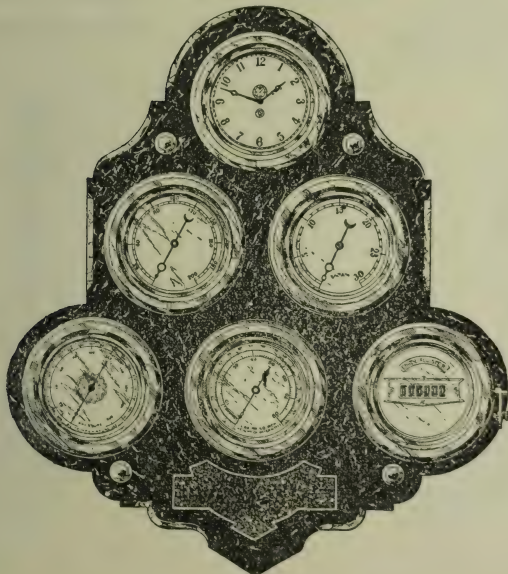
HORIZONTAL



B909

GAUGE BOARD

For Six Instruments



B910

Can furnish any design of Marble, Slate, or Wood.

State number and size of instruments wanted. Make a rough sketch of pattern desired. Prices on application.



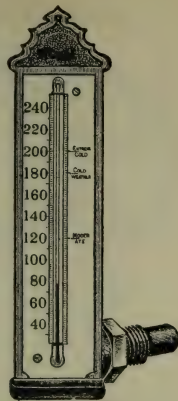


B911

Each, \$2.00

STRAIGHT

ANGLE



B912

Each, \$2.50

## HOT WATER THERMOMETERS

For Heating Systems

**CONICAL SHAPED  
BACK ANGLE PATTERN**  
With Detachable Stem  
and Union Connection

## STEAM PLANT THERMOMETERS AND MERCURY GAUGES

For Feed Water, Economizers, Con-  
densers and Thermo Steam  
Indicators

Can furnish with scale graduated to 280°  
F. and 30 pounds steam.

These thermometers are usually with  
7-inch, 9-inch, or 12-inch scale. With  
either Straight or Angle Stem.

Can also be furnished with stems set at  
obtuse angle for high or low location.

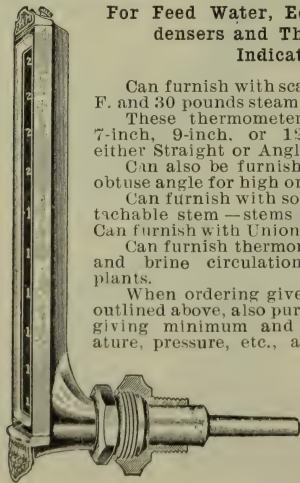
Can furnish with solid stem or with de-  
tachable stem—stems any length desired.  
Can furnish with Union connection.

Can furnish thermometers for ammonia  
and brine circulation for refrigerating  
plants.

When ordering give full particulars as  
outlined above, also purpose to be used for,  
giving minimum and maximum tempera-  
ture, pressure, etc., as near as possible.

Also state whether  
Flat Case, Cylind-  
rical Case, or  
Conical shaped  
back, Straight or  
Angle Stem.

Prices on ap-  
plication.



B913



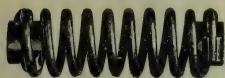
B914

**B913.**—Angle Thermometer showing detachable stem and Union Connection.  
Can furnish special plug to close union when thermometer is removed.

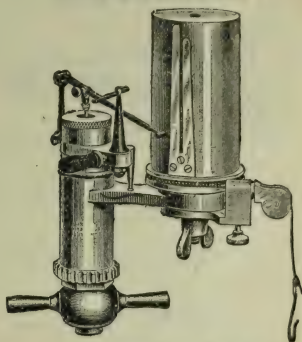
**B914.**—Shaw's Mercury Pressure and Vacuum Gauge, for any pressure. State  
minimum and maximum pressure. 16-inch Column, Nickel Plated, \$25.00.

# AMERICAN THOMPSON IMPROVED INDICATORS

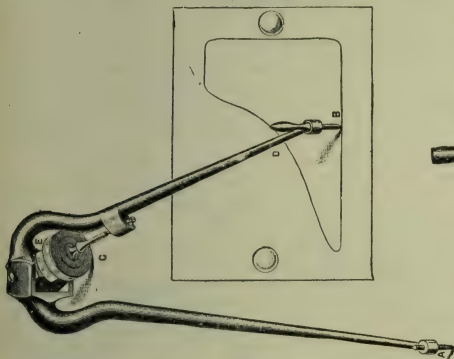
SPRING



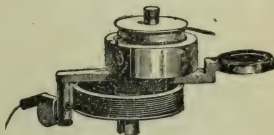
ENGINE INDICATOR No. 1



PLANIMETER



REDUCING WHEEL



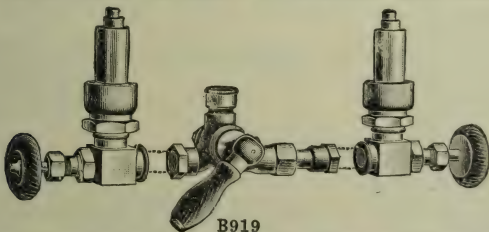
Indicator Nos. 1 or 2, for Steam, Gas, or Oil Engines.....	each	85.00
Ammonia Indicator or Indicator with Electrical Attachment.....	"	110.00
Dentent Motion, each, \$10.00. Reducing Wheels.....	"	15.00

Each Indicator is packed in a handsome mahogany case: the prices given above include Indicator with one cylinder spring, two single or one three way cock, one scale, wrenches, screw driver, bottle of oil and book entitled "Twenty Years With the Indicator."

No. 1 Indicator has 2-inch paper drum, No. 2 1½-inch paper drum.

Cylinder or Vacuum Springs, each, \$5.00. Planimeters, each, \$15.00.

## COMPLETE INDICATOR ATTACHMENT WITH RELIEF AND CORNER VALVES



B919

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Fin., without Relief Valves..each	23.00	24.00	25.00	25.60	27.00	34.00	42.00	50.00
N. P., without Relief Valves. "	25.60	26.40	28.00	29.00	32.00	40.00	47.00	58.00
Finished, with Relief Valves "	32.00	34.00	37.00	40.00	45.00	60.00	84.00	100.00
N. P., with Relief Valves... "	36.00	38.00	42.00	46.00	53.00	70.00	94.00	110.00

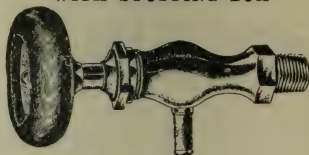
## COMPRESSION GAUGE COCKS

PLAIN



B930

WITH STUFFING BOX



B931

Threaded for Iron Pipe

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Each.....	.95	1.00	1.35	Each.....	1.20	1.30	1.70

MISSISSIPPI GAUGE COCK



B932

BALL GAUGE COCK



B933

Threaded for Iron Pipe

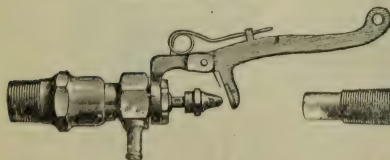
Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Each.....	.90	1.20	1.80	Each.....	1.00	1.00	1.00

Can be furnished with spring  
at special price.

Price is with Iron Ball. Brass  
Ball furnished at special price.

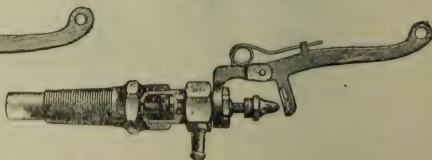
## SELF-GRINDING ROTATING GAUGE COCKS

SHORT SHANK



B934

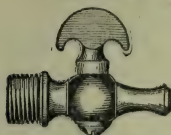
LONG SHANK



B935

Pipe Threaded  $\frac{1}{2}$ -inch or  $\frac{3}{4}$ -inch. Each \$2.50.

T HANDLE

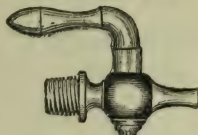


B940

AIR COCKS

Single Thread  
Straight

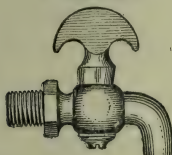
LEVER HANDLE



B941

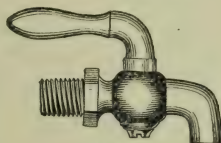
Inch.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	Inch.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Each .....	.40	.45	.50	.60	Each .....	.55	.60	.65	.75

T HANDLE



B942

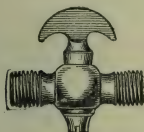
LEVER HANDLE



B943

Inch .....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	Inch.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Each.....	.70	.80	.90	1.00	Each.....	.85	.95	1.05	1.15

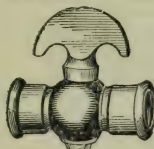
T HANDLE—Male



B944

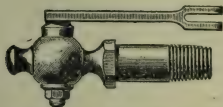
Double Thread

T HANDLE—Female



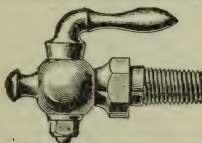
B945

Inch.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	Inch.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	.....
T Handle.....	.55	.65	.75	.90	T Handle .....	.65	.70	.85	.....
Lever Handle...	.70	.80	.90	1.05	Lever Handle...	.80	.85	1.00	.....



SLOTTED LEVER—B946

CYLINDER  
COCKS



LEVER HANDLE—B947

Cylinder Cocks, without union, will be furnished with discharge down through end of key, except on special order.

Size Pipe Thread .....	inch	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Slotted Lever, Long Shank.....	each	1 15	1.30	1.40	1.85	.....
Lever Handle, " .....	"	1.00	1.15	1.35	1.65	2.75

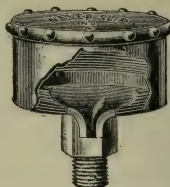
If with straight discharge with union add to list 50c.

Cylinder Cocks illustrated above have discharge downward through end of key. Can be furnished from factory with straight discharge with or without union, also with short shank, and T Handle, if desired.



**"NEVERSLIP"  
GREASE**

B960



**PLAIN  
CUP**

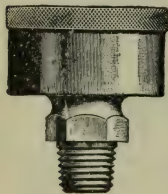
B960

Number.....	1	2	3	4	5	6	7
Finished Brass.....each	.70	.90	1.15	1.50	2.15	2.90	5.50
Rough "....."	.60	.80	1.05	1.35	1.80	2.80	4.50
Diameter.....inches	1 $\frac{1}{8}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	2 $\frac{3}{4}$	3	3 $\frac{1}{2}$
Height....."	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{1}{4}$
Size, Thread....."	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$

**PLAIN STEEL GREASE CUPS—B961**

Number.....	00	0	1	2	3	4
Blued Steel.....each	.65	.80	.95	1.25	1.75	2.50
Rough "....."	.50	.65	.80	1.05	1.45	2.00
Inside Diameter.....inches	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Pipe Thread....."	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$
Capacity Grease.....ounces	$\frac{1}{2}$	$\frac{2}{3}$	1	2	3 $\frac{1}{2}$	5

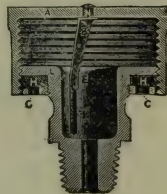
**"DIAMOND"**



B962

**SPECIAL PLAIN BRASS  
GREASE CUPS**

**"TIGER" SECTIONAL**

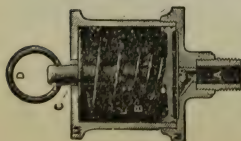


B963

Number.....	00	0	1	2	3	4
Price, Finished Brass.....each	.70	.90	1.15	1.50	2.15	2.90
" Rough "....."	.56	.74	.96	1.28	1.76	2.30
Inside Diameter (Tiger).....inches	$\frac{3}{8}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	1 $\frac{1}{2}$	2 $\frac{3}{8}$	2 $\frac{3}{4}$
Height over all....."	1 $\frac{3}{4}$	2	2 $\frac{5}{8}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	3 $\frac{1}{4}$
Pipe Thread....."	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$
Capacity Grease.....ounces	$\frac{1}{2}$	$\frac{2}{3}$	1	2	3 $\frac{1}{2}$	5

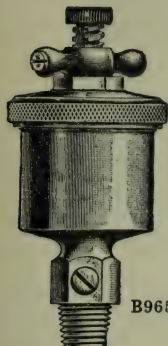
"Diamond" is  $\frac{1}{8}$ " larger diameter, but height not so great as above.

**IRON COMPRESSION GREASE CUPS—B964**



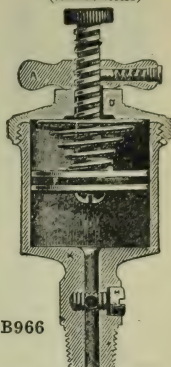
Number.....	1	2	3	4
Inside Diam.... inches	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Pipe Thread.... "	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$
Capacity... ..ounces	1 $\frac{1}{2}$	3	6	10
Iron.....each	1.50	1.70	2.30	3.20

"DANDY"



B965

"IDEAL"  
(Sectional)



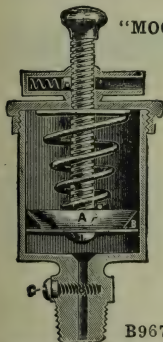
B966

**AUTOMATIC  
COMPRESSION  
GREASE CUPS**

Finished Brass

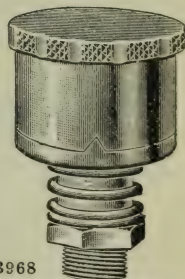
Number .....	00	0	1	2	3	4	5
Price..... each	1.50	2.00	2.50	3.20	4.30	6.00	12.50
Outside Diam.(Ideal) inches	1 $\frac{3}{8}$	1 $\frac{3}{4}$	2	2 $\frac{5}{8}$	3 $\frac{1}{4}$	3 $\frac{5}{8}$	4 $\frac{1}{4}$
Pipe Thread .....	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	3 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3 $\frac{1}{4}$
Capacity (Grease)... ounces	1 $\frac{1}{3}$	1	1 $\frac{1}{2}$	3	6	10	18

"MOON"



B967

"RATCHET"



B968

Ratchet Cups are intended for loose pulleys or for places where vibration is great. Cap cannot jar off; it locks at each half turn.

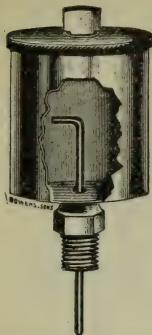
"MOON"

Finished Brass

Number .....	0	1	2	3	4	5
Price..... each	1.50	2.00	2.50	3.20	4.30	9.00
Inside Diameter..... inches	1	1 $\frac{1}{2}$	2	2 $\frac{1}{8}$	2 $\frac{3}{4}$	3 $\frac{1}{2}$
Pipe Thread .....	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	3 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Capacity (Grease)..... ounces	1 $\frac{1}{3}$	1	1 $\frac{1}{2}$	2 $\frac{1}{2}$	5 $\frac{1}{2}$	10

**RATCHET CUPS-B968**

Number.....	000	00	0	1	2	3
Finished Brass (Polished)..... each	1.05	1.25	1.50	1.90	2.50	3.40
Rough Brass..... "	.90	1.10	1.35	1.70	2.30	3.10
Rough Steel..... "	.....	.80	.95	1.15	1.40	2.00
Inside Diameter..... inches	3 $\frac{1}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$
Shank Pipe Thread..... "	1 $\frac{1}{8}$	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	3 $\frac{3}{8}$	1 $\frac{1}{2}$
Capacity (Grease)..... ounces	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2 $\frac{1}{3}$	1	2	3 $\frac{1}{2}$



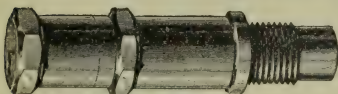
## TRACTION CRANK PIN GREASE CUP

**B970**

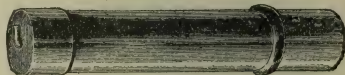
This Cup is a most economical crank pin oiler. The soft copper wire plunger is three-cornered and carries the grease down to the crank pin at every revolution. In putting it on, see that the plunger has a half-inch travel between cover and crank pin.

Number .....	1	2	3	4
Diameter ..... inches	1 $\frac{1}{8}$	1 $\frac{3}{4}$	2	2 $\frac{1}{2}$
Height over all..... "	3	3 $\frac{1}{4}$	3 $\frac{1}{2}$	4 $\frac{3}{4}$
Pipe Thread..... inch	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$
Capacity ..... ounces	$\frac{1}{2}$	1 $\frac{1}{2}$	2	3
Finished Brass..... each	1.35	1.85	2.25	3.00

## BRASS GREASE CUPS



**B975—Crank Pin Cup**



**B976—Shafting Cup**



**B977—Loose Pulley Cup**



**Sectional View of Cups**

Size, Diameter Outside ..... inches	$\frac{3}{8}$	$\frac{5}{8}$	$\frac{3}{4}$
Pipe Thread..... inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
B975—Crank Pin Cup ..... each	2.00	2.50	3.00
B977—Loose Pulley Cup ..... "	.75	1.00	1.50

<b>B976 Shafting Cup</b>	Size, Diameter Outside....Ins.	$\frac{1}{2}$	$\frac{1}{16}$	$\frac{3}{8}$	1	1 $\frac{1}{2}$
	Size, Shaft..... inches	$\frac{3}{4}$ to 1 $\frac{1}{4}$	1 $\frac{1}{2}$ to 2	2 $\frac{1}{2}$ to 3	3 $\frac{1}{2}$ to 6	6 and up
	Price..... each	.15	.20	.25	.30	.50
<b>Lubri- cant in Sticks</b>	Diameter..... inches	$\frac{3}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1 $\frac{1}{4}$
	Price (in boxes 50 each)....per hundred	2.00	2.50	4.00	5.00	8.00

Grade of lubricant suitable for various speeds. Shafting: 250 and less revolutions, M; to 450 revolutions, A; to 1000 and over, AA.

Grade of lubricant suitable for various speeds. Loose Pulleys: 250 and less revolutions, M; over 250 revolutions, A.

## PLAIN BRASS OIL CUPS

PLAIN



B980

ELBOW SHANK



B981

TEE HANDLE



B982

Diameter.....inches	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Size, Thread.....inches	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$
Plain.....each	.25	.30	.35	.40	.50	.60	.90
Elbow Shank....."	.....	.....	.75	.85	.....	1.00	1.40
Tee Handle....."	.....	.....	.90	1.00	.....	1.50	2.00

Diameter.....inches	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	.....
Size, Thread.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	.....
Plain.....each	1.25	1.75	2.25	2.75	3.50	4.00	.....
Elbow Shank....."	1.85	2.40	3.00	3.80	.....	.....	.....
Tee Handle....."	2.50	3.00	3.75	4.50	.....	.....	.....

Open



B983

STYLE B

Closed



B984

## SELF-CLOSING OIL CUPS

Number.....	1	2	3	4	5	6	7	8
Size, Thread.....inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{8}$
Number of Threads.....per inch	32	32	24	24	24	24	Pipe	Pipe
Price.....per hundred	7.00	9.50	10.70	12.50	16.00	22.00	30.00	38.00

Nos. 7 and 8 are fitted with Inner Tube and Wick.

## BRASS GLOBE LOOSE PULLEY OILER

B985

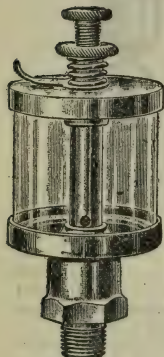


Number.....	0	1	2	3	4
Capacity.....ounces	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{3}{4}$
Diameter of Body.....inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Rough Brass.....each	25	.30	.40	.50	.65

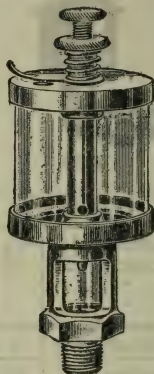


## DETROIT GLASS OIL CUPS

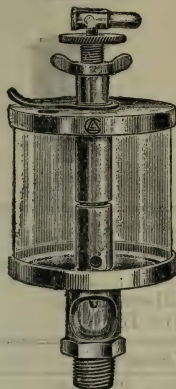
SET FEED



B986

SIGHT AND SET  
FEED

B987

SIGHT, SET, AND  
STOP FEED

B988

## FINISHED

Set Feed	Number .....	10	11	12	13	14	15	16	17	18
	B986.....each	1.30	1.50	1.70	1.90	2.10	2.45	3.25	4.80	7.00
Sight and Set Feed	Number .....	30	31	32	33	34	35	36	37	38
	B987.....each	2.30	2.50	2.80	3.00	3.25	3.70	4.50	6.55	8.75
Sight, Set and Stop Feed	Number ....	50	51	52	53	54	55	56	57	58
	B988..each	3.00	3.25	3.50	3.75	4.00	4.45	5.25	7.30	9.50
Dimensions	Capacity..ounces	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	$2\frac{1}{2}$	4	5	10	18
	Diam. of Glass, in.	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	3	$3\frac{1}{2}$
	Height of Glass "	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{8}$	$2\frac{3}{8}$	3	4
	Size, Thread . "	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{2}$

Nickel Plated Oilers to order, at special price.

## TIN SHAFTING OIL CUPS

B989



Number	Capacity	Diameter of Largest Part in Inches	Height in Inches	Tubes	Prices Per Dozen
1	1 oz.	2	$1\frac{3}{4}$	$\frac{1}{4}$ to $\frac{1}{2}$	2.50
2	2 oz.	$2\frac{3}{8}$	$2\frac{1}{2}$	$\frac{3}{8}$ to $\frac{3}{4}$	3.50
3	$2\frac{1}{2}$ oz.	3	3	$\frac{1}{2}$ to $\frac{7}{8}$	4.50

## ADAPTATION OF THIS STYLE OF CUP

To shafting of every description. Especially adapted to use in place of the candles applied to small shafting. All sizes of Tubes correspond to all sizes of candles.

When bushed, \$3.00 per doz. extra on each size additional.

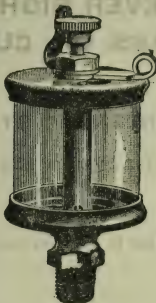
# GLASS OIL CUPS

SCREW TOP  
"Miami" Style



B995

SLIDE TOP  
"Pioneer" Style



B996

INDEX TOP  
"Victor" Style



B997

Number .....	000	00	0	1	1½	2	3	4	5	6	8
Capacity.....ounces	¼	½	¾	1	1½	2½	4	5	10	18	34
Out. Diam. Glass.....in.	1	1½	1¾	1½	1¾	2	2¼	2½	3	3½	4¼
Height of Glass....."	¾	1	1½	1¾	1¾	1¾	2½	2¾	5	4	5
Size Thread....."	¾	1	1½	1¾	1¾	1¾	2½	2¾	5	4	5
B995 Screw Top, Fin.....ea.	.70	.75	.80	1.00	1.25	1.50	1.90	2.40	3.10	4.00	....
B996 Slide Top, Fin....."	.70	.75	.80	1.00	1.25	1.50	1.90	2.40	3.10	4.00	8.50
B997 Index Top, Fin....."	....	....	1.00	1.20	1.45	1.75	2.15	2.70	3.40	4.30	9.25

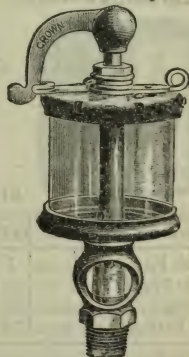
Nickel-Plated to order at special price.

SLIDE TOP  
"Royal" Style



B998

INDEX TOP  
"Crown" Style



B999

## SIGHT FEED OILERS

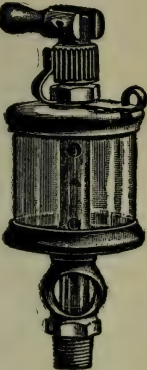
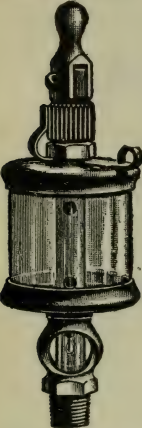
Number .....	000	00	0	1	1½	2	3	4	5	6	8
Each.....	.95	1.10	1.25	1.50	1.75	2.10	2.55	3.15	3.90	4.80	10.00

Size of shank, dimensions of glass and capacity same as listed top of page.  
Nickel-Plated to order at special price.

For extra Glasses and Cork Washers, see page 204.

LEVER UP,  
CUP FEEDING

LEVER DOWN,  
FEED STOPPED



SNAP LEVER SIGHT FEED  
GLASS OIL CUPS

"SENTINEL" STYLE

Unequalled for Dynamo and Engine Use

Nickel Plated to order at special price.

B1000

Number .....	0	1	1½	2	3	4	5	6	8
Finished .....each	3.00	3.25	3.50	3.75	4.25	5.25	7.25	9.25	20.00
Capacity.....ounces	$\frac{5}{8}$	1	1½	2½	4	5	10	18	34
Outside Diam. Glass. in.	1¼	1½	1¾	2	2¼	2½	3	3½	4¼
Height of Glass..... "	1⅛	1⅜	1⅝	1⅞	2⅛	2⅜	3	4	5
Size, Thread .....	1/8	¼	¼	3/8	3/8	3/8	½	½	¾

CYLINDRICAL GLASS

URN-SHAPED GLASS



GLASSES AND CORK  
WASHERS

For Glass Oil Cups

B1010

B1011

Number .....	000	00	0	1	1½	2	3	4	5	6	8
Outside Diam. Glass...ins.	1	1⅛	1¼	1½	1¾	2	2¼	2½	3	3½	4¼
Height Cylind'l " "	$\frac{7}{8}$	1	1⅛	1⅜	1⅝	1⅞	2⅛	2⅜	3	4	5
Glasses.....each	.05	.06	.08	.10	.10	.12	.15	.25	.35	.65	1.50
Cork Washers...per dozen	.15	.18	.24	.30	.36	.40	.45	.50	.60	.75	1.50

Urn-Shaped Glass shipped direct from factory only. Height differs from above.

SPECIAL SIZE CYLINDRICAL GLASSES

Outside Diameter.... inches	$\frac{7}{8}$	1%	1¾	2	2¾	2¾	3¾	4¾
Height.....inches	1	1%	1½	1¾	2½	2½	2¾	5¾
Each .....	.08	.10	.12	.15	.25	.35	.40	1.50

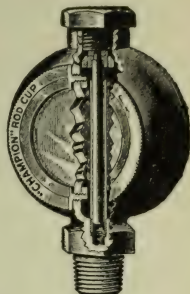


## CHAMPION ROD OIL CUPS

Suitable for all Movable Bearings

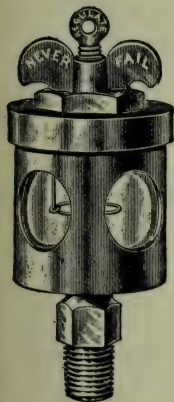
Starts to feed as soon as machinery is put in motion. Stops feeding when movement of machinery ceases.

B1012



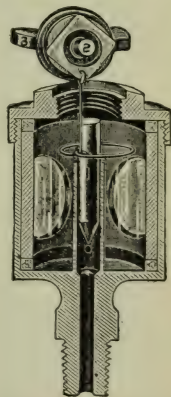
Number.....	1	2	3	3½	4
Capacity.....ounces	1¼	2½	5	8	12
Outside Diameter....inches	2	2½	3	3½	4
Width....."	1½	1½	2¼	2¾	3½
Size Thread....."	¼	¾	½	½	¾
Price, Finished.....each	1.40	2.00	2.60	3.50	4.00
" Extra Glasses....."	.05	.08	.10	.12	.15
" " Corks.....per dozen	.20	.30	.40	.50	.60

Nickel Plated to order at special price.



## "NEVER FAIL" CRANK PIN OILEP

B1013



FINISHED BRASS

Size Number.....	1	2	3	4
Each.....	1.50	1.75	2.00	2.50
Outside diameter of glass....inches	1½	1¾	1¾	2¼
Height of Glass....."	1½	1¾	1¾	2¼
Capacity.....ounces	¾	1	1½	2¼
Pipe Thread of Shank.....	¼	½	¾	¾

Nickel Plated to order at special price.



# LUNKENHEIMER PATENT DRIP AND SIGHT-FEED VALVES, WIPER CUPS, ETC.

Oiling Devices for Engine and Machinery Bearings.



Fig. 0499.  
Cross Drip Valve.



Fig. 0690.  
Straight Drip Valve.



Fig. 0500.  
Angle Drip Valve.



Fig. 0296.  
Corner Drip Valve.



Fig. 0688.  
Cross Sight-Feed Valve.



Fig. 0501.  
Straight Sight-Feed Valve.



Fig. 0502.  
Angle Sight-Feed Valve.



Fig. 0964.  
Corner Sight-Feed Valve.



Fig. 0689.  
Cross Sight-Feed Valve, with Union.

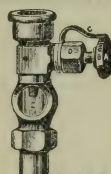


Fig. 0593.  
Straight Sight-Feed Valve, with Union.



Fig. 0594.  
Angle Sight-Feed Valve, with Union.



Fig. 0965.  
Corner Sight-Feed Valve, with Union.



Fig. 0503.  
Adjustable Wick Wiper Cup.



Fig. 0504.  
Adjustable Wick Wiper Cup with Elbow Shank



Fig. 0578.  
Adjustable Wiper Cup for Crank Pin.



Fig. 0579.  
Adjustable Plain Wiper Cup with Elbow Shank.



Fig. 0505.  
Plain Wiper Cup.



Fig. 0969.  
Adjustable Plain Wiper Cup with Straight Shank.



Fig. 0552.  
Horizontal Wick Wiper Cup



Fig. 0506.  
Oil Cup Wiper Tip.



Fig. 0507.  
Drip Trough.

All valves illustrated on preceding page are made in  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$  and  $\frac{1}{2}$ -inch sizes. Drip valve outlets are threaded for  $\frac{1}{4}$ -inch O. D. brass tubing, 27 threads. Generally  $\frac{3}{8}$ -inch valves are used, and unions on sight feed valves tapped for  $\frac{1}{4}$ -inch pipe.

# DRIP VALVES, WIPERS, ETC.

Size.....inches	FINISHED BRASS		NICKEL PLATED	
	$\frac{1}{8}$ , $\frac{1}{4}$ or $\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{8}$ , $\frac{1}{4}$ or $\frac{3}{8}$	$\frac{1}{2}$
Fig. 0499 Cross, or 0296 Corner Drip Valves, ea.	1.50	1.60	1.75	1.85
0690 Straight, or 0500 Angle " " "	1.25	1.40	1.50	1.65
0688 Cross, or 0964 Corner " " "	2.30	3.20	2.60	3.50
0501 Straight, or 0502 Angle " " "	2.00	3.00	2.25	3.25
0689 Cross, or 0965 Corner " " "	2.80	3.70	3.10	4.00
0593 Straight, or 0594 Angle " " "	2.50	3.50	2.80	3.80
0969, 0503 and 0578 Straight WiperCups "	2.50	3.00	3.00	3.50
0579 and 0504 Elbow " " "	3.00	3.50	3.50	4.00
0552 Horizontal Wick " " "	2.00	2.30	2.30	2.60
0506 Wiper Tips " " "	.40	.50	.50	.60

FIG. 0505. PLAIN WIPER CUP

Pipe Thread	O. Diameter	Brass	Nickel Pl.
$\frac{1}{4}$	1 $\frac{1}{4}$	1.00	1.20
$\frac{3}{8}$	1 $\frac{1}{2}$	1.50	1.75
$\frac{1}{2}$	2	2.00	2.40

FIG. 0507. DRIP TROUGHS

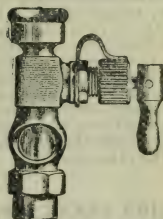
Length	Pipe Thread	Rough	Finished	Nickel Pl.
3 inches	$\frac{1}{4}$	.75	1.00	1.25
5 inches	$\frac{3}{8}$	1.00	1.50	2.00
7 inches	$\frac{1}{2}$	1.50	2.00	2.75
9 inches	$\frac{1}{2}$	2.00	2.75	3.50



B1040. Plain

## SNAP LEVER VALVES

Any valve on opposite page can be furnished with snap lever at special price. Use same list price, also describe by same figure, adding the words "with Snap Lever."



B1041. Sight Feed



B1042



B1043

## PRESSURE SIGHT-FEED VALVES

Oiling Devices for Engine and Machinery Bearings



B1044

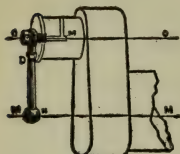


B1045

Made with or without Union. Can furnish with outlet smaller than inlet if desired.

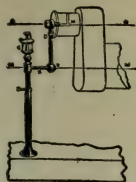
Finish.....inches	FINISHED BRASS				NICKEL PLATED			
	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Straight and Angle Sight-Feed Valve.....each	3.60	4.20	4.50	5.30	4.00	4.60	5.00	5.90
With Union " "	4.20	4.50	5.00	6.10	4.60	5.00	5.60	6.80
Cross and Corner Sight-Feed Valve..... "	4.20	4.50	5.00	6.10	4.60	5.00	5.60	6.80
With Union " "	4.50	5.00	6.30	6.80	5.00	5.60	7.00	7.50

## PLAIN OILER ARM



B1046

## OILER ARM COMPLETE



B1047

## OILING DEVICES

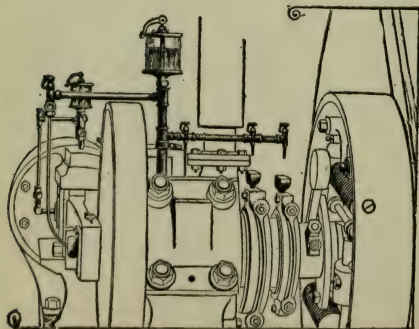
The length of oiler arm is always half the length of stroke of engine, and the above prices on the complete device are based on furnishing a stand of ordinary height; but where specifications call for stands higher than 24 inches for No. 1 device, 36 inches for No. 2, and 40 inches for No. 3, an additional charge will be made to cover the extra height.

Number .....	1	2	3
Length of Stroke.....inches	Up to 16	Up to 30	Up to 60
Pipe Thread on Bolt (O) .....	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$
Price, Plain Oiler Arms, Brass.....each	6.00	7.00	9.00
“ “ “ “ Nickel Plated “	7.00	8.00	11.00
“ Complete Device, Brass..... “	15.00	17.00	21.00
“ “ “ “ Nickel Plated “	18.00	20.50	25.00

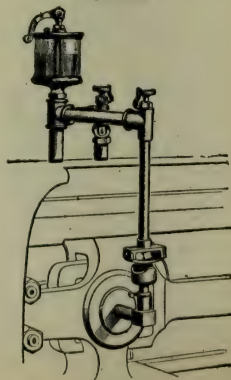
The Plain Oiler Arm is intended to be used as an auxiliary to the Crank Pin Cup, to afford an extra and direct means of lubricating the crank pin while the engine is in motion by squirting oil with an oil can through the hole in ball H. In ordering these, give stroke of engine.

The Complete Oiler Arm with Adjustable Oil Cup Stand gives direct continuous lubrication to the crank pin from the oil cup on the floor stand. In ordering these, give stroke of engine and distance from center of crank shaft to floor.

When desired, the complete device can be used for feeding grease instead of oil. In such cases we furnish, without extra charge, a grease cup in place of the oil cup. When not otherwise specified, we will send an oil cup of a size proportionate to that of the oiler arm.

OILING CRANK PIN, PILLOW BLOCK, AND  
ECCENTRICS FROM ONE CUP

B1048

CROSS HEAD AND SLIDE  
OILER

B1049



B1050

MULTIPLE OILER

For Bearings

Can Also be Arranged for Cylinder Lubricator When so Ordered

Capacity .....	1 Pt.	1 Qt.	½ Gal.	1 Gal.	2 Gal.	3 Gal.
Reservoirs, Finished .....	each	8.40	11.60	15.00	20.00	26.60
Sight-Feeds, " .....	"	1.35	1.40	1.50	1.55	1.60
Finished Brackets .....	per pair	1.35	1.70	2.00	2.35	2.70
					3.30	

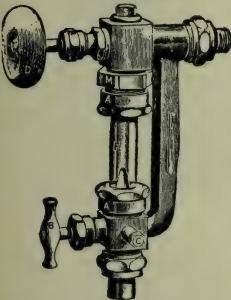
Nickel Plated, extra.  
Can be furnished with device for operating several valves simultaneously, as illustrated B1051.



B1051

INDEPENDENT SIGHT FEEDS

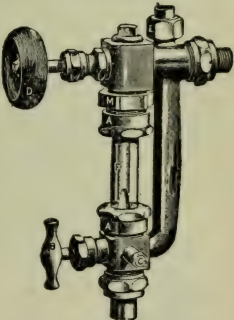
PLAIN



B1052

"Independent" Sight Feeds are intended for use in connection with closed pressure tank systems for supplying oil to steam chests and cylinders of steam engines.  
The Plain Sight Feed is intended for use on simple engines and should be connected above the throttle valve.  
The Sight Feed with Equalizing Attachment can be attached on the steam chests of simple or compound engines.  
Size Shank 3/8-inch pipe size. Oil Connections 1/4-inch.  
Finished B1052, 6.00; B1053, 6.50.  
Nickel Plated, 50c. extra.

WITH EQUALIZING ATTACHMENT

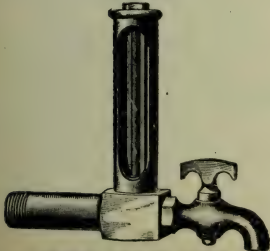


B1053

OIL GAUGES

With Revolvable Shield. Finished

B1054



WITH DRAIN COCK

Thread, Pipe Size...inches	1/8	1/4	3/8	1/2
With Drain Cock.....each	.80	.90	1.05	1.40
Without Drain Cock.. "	.40	.50	.65	1.00

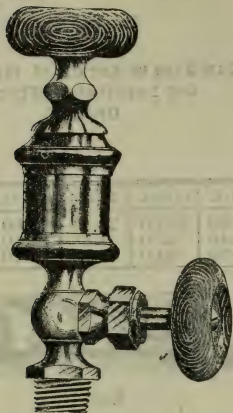
Nickel Plated, extra.



## PLAIN BRASS LUBRICATORS

PLAIN

WITH COCK AND TUBE

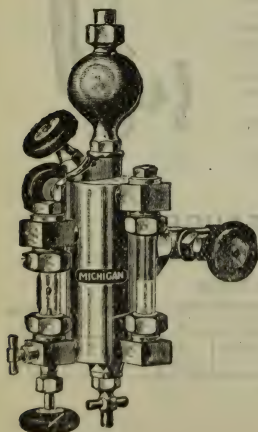


B1060



B1061

Diameter...inches	1	1¼	1½	1¾	2	2¼	2½	3	3½	4
Pipe Thread...in.	¾	¾	¾	1½	1½	1½	1½	¾	¾	¾
Capacity...ounces	¾	1	1¼	1½	2½	4	5	10	18	24
Price.....each	2.00	2.20	2.40	2.60	2.90	3.25	3.75	4.75	7.00	10.00
With Cock and Tube	3.00	3.20	3.40	3.60	3.90	4.25	4.75	5.75	8.00	11.00



B1062

"CYCLONE"  
DOUBLE CONNECTION LUBRICATOR

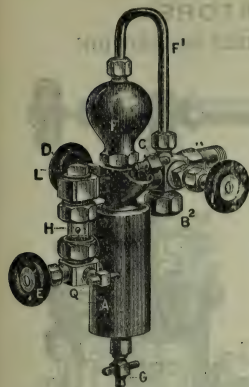
B1062

Pints.....	¼	½	1	2	4	8
Thread...inches	¾	1½	1½	1½	¾	¾
Each .....	13.30	15.00	20.00	26.75	38.35	60.00

# DETROIT SINGLE CONNECTION SIGHT FEED LUBRICATOR

Nickel Plated Lubricators Special

B1063



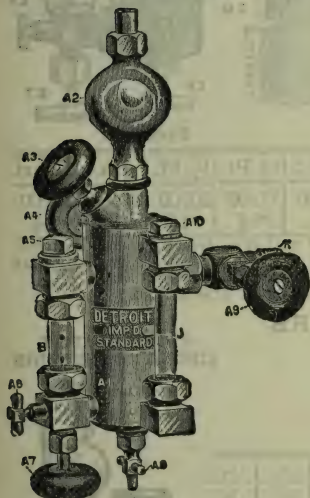
Capacity.....pints	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{2}$	1	2
Thread Pipe Size...	$\frac{1}{2}$ in.	$\frac{1}{2}$ in.	$\frac{1}{2}$ in.	$\frac{1}{2}$ in.	$\frac{1}{2}$ in.
Finished.....each	15.00	17.00	20.00	28.00	42.00

Nickel Plated to order at special price.

# DETROIT STANDARD DOUBLE CON- NECTION SIGHT FEED LUBRICATOR

Nickel Plated Lubricators Special

B1064



Capacity.....	$\frac{1}{3}$ Pt.	$\frac{1}{2}$ Pt.	1 Pt.	1 Qt.	$\frac{1}{2}$ Gal.	1 Gal.
Thread Pipe Size.....	$\frac{1}{2}$ in.	$\frac{1}{2}$ in.	$\frac{1}{2}$ in.	$\frac{1}{2}$ in.	$\frac{3}{4}$ in.	$\frac{3}{4}$ in.
Finished.....each	17.00	22.00	30.00	45.00	60.00	75.00

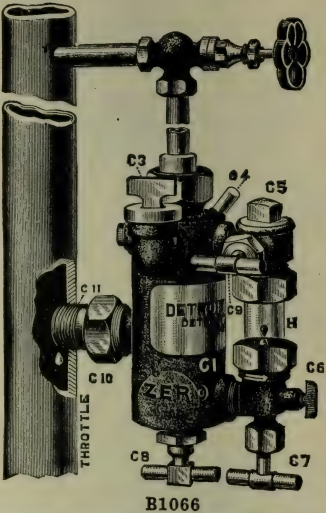
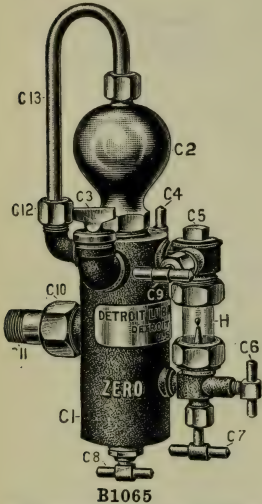
Nickel Plated to order at special price.

Repairs can be furnished. Orders should indicate part wanted by letters and figures shown on illustration, and state size of lubricator, also whether for single connection or double connection lubricator.

DETROIT ZERO LUBRICATORS

SINGLE CONNECTION

DOUBLE CONNECTION



Size .....	1/4 Pt.	1/3 Pt.	1/2 Pt.	Pint	Quart
Bronzed Body, Finished Trimmings.	15.00	17.00	20.00	28.00	42.00
Pipe Thread on S'g'l Connection . in.	*1 1/2	*1 1/2	*1 1/2	1 1/8	1 1/2

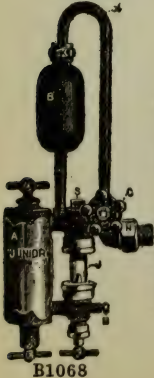
Oil in this cup is kept warm by the steam, and will flow freely in cold weather. Order repairs by indicating letters and numbers as shown on illustration, state size of lubricator, and whether single or double connection.

\*Double Connection, 1/4 pt., 1/3 pt. and 1/2 pt. have 3/8 in. pipe thread.

LUBRICATORS

"JUNIOR"

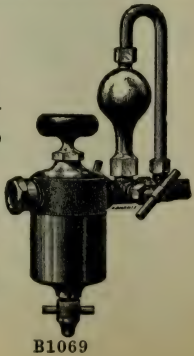
SWIFT CLASS F SINGLE CONNECTION



"JUNIOR"			
Pints .....	1/4	1/3	1/2
Pipe Thread .....	3/8	3/8	1/2
Each .....	7.00	8.00	10.00

SWIFT SINGLE CONNECTION

Pints .....	1/4	3/8	1/2	1
Pipe Thread.....	3/8	3/8	3/8	1/2
Each .....	3.50	3.75	4.00	6.00



# BRASS SIGHT FEED LUBRICATORS

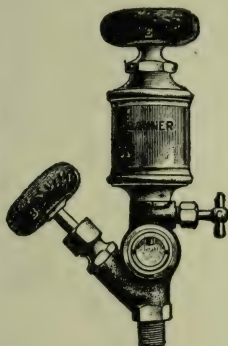
For Gas, Gasoline, or Oil Engines, Air Compressors, etc.

"DETROIT"



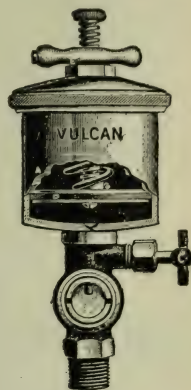
B1070

"BANNER"



B1071

"VULCAN," FORCE FEED



B1072

"DETROIT"

Capacity .....	$\frac{1}{4}$ Pint	$\frac{1}{2}$ Pint	$\frac{3}{4}$ Pint	1 Pint	1 Quart
Pipe Thread.....inches	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$
Price, Finished.....each	15.00	17.00	20.00	28.00	42.00
" Nickel Plated. "	18.00	20.00	23.00	32.00	47.00

Ammonia Cylinder Lubricators same as "Detroit." Illustration, list, etc.

"BANNER"

Diameter.....inches	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$
Pipe Thread.....inches	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$
Capacity.....ounces	1 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	6	10	18
Price, Finished.....each	3.50	4.00	5.00	6.00	8.00	10.00	12.00
" Nickel Plated....."	4.20	5.00	6.00	7.25	9.50	12.00	14.00
" Extra Sight Feed Glasses..per doz.	1.20	1.20	1.20	1.20	1.20	1.20	1.20

"VULCAN," FORCE FEED

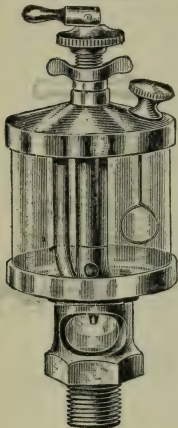
Outside Diameter.....inches	2	2 $\frac{5}{8}$	3 $\frac{1}{4}$	3 $\frac{5}{8}$
Size, Thread.....inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$
Capacity.....ounces	1 $\frac{1}{2}$	3	4 $\frac{1}{2}$	6 $\frac{1}{2}$
Price, Finished.....each	5.00	6.00	8.00	10.00
" Nickel Plated....."	6.00	7.25	9.50	12.00

The "Vulcan" Force Feed Lubricator is intended for feeding heavy oils when cold to Gas Engines and Air Compressor Cylinders. The spring-actuated piston causes a force feed. It is also recommended for use on bearings requiring heavy oil. Do not feed grease.



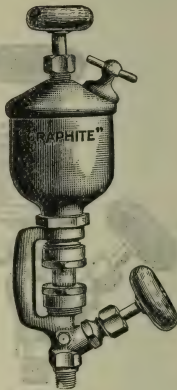
## BRASS LUBRICATORS

**"EXPLOSO" GLASS**  
For Gas, Gasoline, or  
Oil Engines



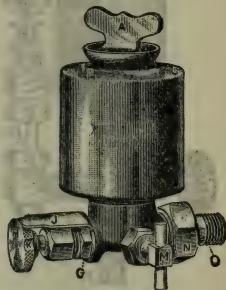
B1075

**GRAPHITE AUTOMATIC  
SIGHT FEED**  
For Steam Engines  
and Pumps



B1076

**STEAM  
AUTOMOBILE  
CYLINDER  
LUBRICATOR**



B1077

**"EXPLOSO"**

Number.....	2	3	4	5	6
Capacity.....ounces	2½	4	5	10	18
Height of Glass.....inches	1½	2½	2¾	3	4
Diam. "....."	2	2¼	2½	3	3½
Pipe Thread....."	¾	¾	¾	½	½
Price Finished.....each	5.00	5.50	6.50	9.00	11.50
" Extra Glasses....."	.12	.15	.25	.35	.65

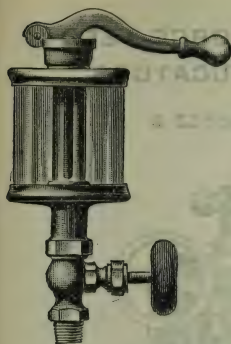
**"GRAPHITE"**

Number.....	1	2	3
Pipe Thread.....inches	¾	½	½
Capacity (Graphite).....ounces	3	5	8
Price, Finished.....each	10.00	12.00	16.00
" Nickel Plated....."	11.00	14.00	18.00

The "Graphite" Sight Feed Lubricator is designed for feeding **Powdered Graphite**. The graphite is fed automatically and continuously in desired quantities, and visibly, by passing it through a sight feed. The Lubricator requires but one connection to the cylinder. It is not advisable to use Graphite alone; it is good practice therefore to use in connection with the "Graphite" Lubricator either an Oil Pump or Sight Feed Lubricator.

**AUTOMOBILE LUBRICATORS**

Number.....	1	2	3
Extreme Width.....inches	2¾	2¾	3
" Length....."	3½	3¾	3¾
" Height....."	4½	6½	7½
Pipe Thread....."	¾	¾	¾
Capacity.....ounces	4	6	8
Price, Rough.....each	2.70	4.00	5.20
" Finished....."	3.30	4.40	5.50
" Nickel Plated....."	3.90	5.20	6.60



B1078

## HAND CYLINDER OIL PUMPS

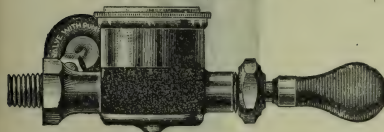
Lever Handle, Glass Body

Number .....	507	508	509	510
Capacity.....	4 oz.	10 oz.	Pint	Quart
Diameter of Glass..inch.	2 $\frac{3}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{2}$	4 $\frac{1}{8}$
Height " " " "	2 $\frac{3}{4}$	3 $\frac{5}{8}$	4	5 $\frac{1}{8}$
Pipe Thread.... "	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Finished.....ea.	7.50	10.00	12.00	16.00

Nickel Plated, extra,

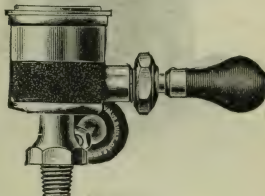
## BRASS OIL PUMPS

HORIZONTAL



B1079

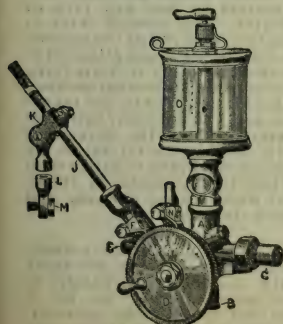
ANGLE



B1080

With $\frac{3}{8}$ " Pipe Thread. Capacity.....	$\frac{1}{4}$ Pt.	$\frac{1}{2}$ Pt.	1 Pt.
Price..... each	3.50	5.00	7.50

Strainer in top, add 15c. Nickel Plated is extra.

SINGLE FEED-  
With Glass Cup


B1081

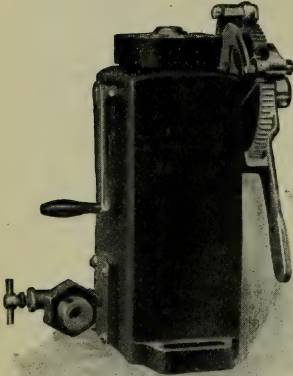
## MECHANICAL OIL PUMPS

With Quart Cup.....each	24.00
" Pint " .....	19.00
Without " .....	16.00
Double Feed with Quart Cup.....	30.00
Single Feed Pump with Compression Cup B966 for Heavy Oils .....	each 24.00

The Double Feed has two stop feed levers on cup.  
Nickel Plated, extra.

## KIPP VALVELESS LUBRICATORS

### STYLE D—SINGLE



B1090

Finished in Black. Capacity 3 Pints

Style D, Single, Black.....ea.	10.00
" " " Nickel Plated "	12.00
Oil Gauge, on any style extra.....	1.00

### STYLE D, DOUBLE

Black, \$12.00. Nickel Plated, \$15.00.

The Double Lubricator, is of greater capacity than the Single. It will positively oil both cylinders of a double engine independently. The two pumps are driven from one shaft, but each independent of the other.

The ratchet connection will be furnished the same as illustrated on Style D single, with the same style of attachment for feed pipe.

This double pump has been used by some parties for oiling the cylinder boxes on a separator.

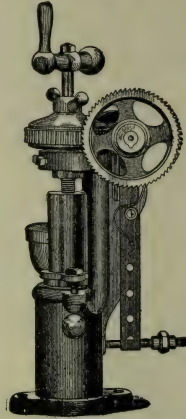
### STYLE D, JUMBO

Has large pumping capacity, for engines doing extra heavy work.

Black. Single, \$10.00; Double, \$12.00.

## KIPP FORCE FEED LUBRICATORS

### STYLE B



B1091

Price, \$12.00.

This lubricator will work in any temperature and is especially recommended for engines in temperatures where oil will not remain in a liquid state.

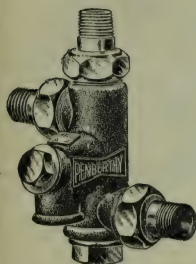
This lubricator has a cut worm gear and shaft, the worm shaft running in babbitted boxes, and is provided with ample regulation to feed any type of traction engine. The ratchet lever is driven from the valve rod of the engine. This turns the ratchet wheel attached to the worm shaft and this in turn turns the worm gear, which is located between two discs, held in position by the thumb screw at the top. As this gear turns the threaded upright shaft, the plunger is forced down, forcing the oil out to the engine, feeding it a spray of oil at each stroke. When the lubricator is empty the friction discs release the gear and the lubricator stops working.

To refill: With plunger at bottom, fill the oil reservoir and open the angle valve at the bottom. Turn handle at top, which raises plunger, the oil is drawn into the space under plunger. When plunger is up, close angle valve and tighten thumb nut and lubricator is again ready for work.

# THE PENBERTHY AUTOMATIC INJECTOR

## SPECIAL PATTERN

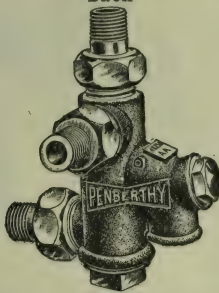
Cut No. 49. Style Left  
and Right. Suction  
Left. Discharge  
Right



## REGULAR STOCK

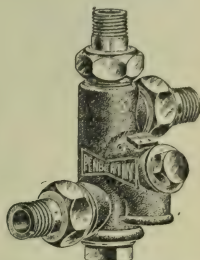
### PATTERN

Cut No. 47. Stock Injector.  
Suction Left. Discharge  
Back



## SPECIAL PATTERN

Cut No. 50. Style Right  
and Left. Suction  
Right. Discharge  
Left



B1100

Size	Price	Horse Power Based on Ordinary Tub. Boiler	Horse Power Based on 30 lbs. Water per H. P. per Hour	Pipe Con- nection, Inches	Capacity per Hour, 1 to 3 feet lift, 60 to 85 lbs. Steam Pressure	
					Maximum Gallons	Minimum Gallons
O	15.00	3 to 6	4 to 8	1/4	60	40
OO	16.00	4 " 8	6 " 12	3/8	80	55
A	18.00	8 " 16	10 " 20	1/2	135	70
AA	20.00	12 " 22	15 " 30	1/2	180	100
B	25.00	17 " 32	22 " 45	3/4	260	140
BB	30.00	20 " 45	25 " 60	3/4	355	170
C	40.00	40 " 65	45 " 80	1	475	300
CC	45.00	45 " 80	50 " 100	1	600	350
D	55.00	50 " 100	60 " 135	1 1/4	800	425
DD	60.00	75 " 135	85 " 165	1 1/4	1,000	525
E	75.00	100 " 180	125 " 235	1 1/2	1,400	800
EE	90.00	115 " 235	150 " 320	1 1/2	1,900	* 900
F	110.00	160 " 320	200 " 400	2	2,400	1,300
FF	125.00	200 " 400	250 " 500	2	3,000	1,600
G	150.00	300 " 500	325 " 600	2 1/2	3,600	2,000
GG	200.00	375 " 600	400 " 750	2 1/2	4,200	2,500

N. B.—Where Injectors are ordered by size connections we always send the size having the larger capacity.



### Net Prices, Parts

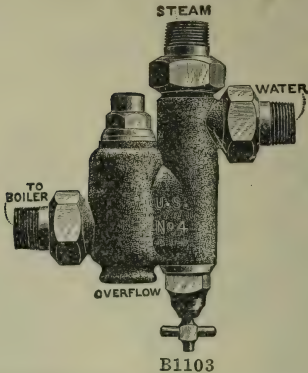
	O or OO	A or AA	B or BB	C or CC	D or DD	E	EE	F	FF
R—Steam Jet.....	0.25	.35	.45	.55	.65	.75	.75	.85	1.00
S—Suction Jet.....	.25	.35	.45	.55	.65	.75	.75	.85	1.00
Y—T—Delivery Jet	1.25	1.50	2.00	2.50	3.00	3.75	4.50	5.50	6.50
X—Coupling Nut...	.25	.30	.40	.50	.60	1.25	1.25	1.50	1.50
V—Tail Pipe.....	.25	.30	.40	.50	.60	.80	.80	1.00	1.00
Z—Overflow Cap...	.30	.40	.50	.60	.70	.80	.80	.90	.90
P— " Valve.....	.40	.50	.60	.75	.90	1.00	1.10	1.25	1.25
N— " Hinge.....	.10	.10	.15	.15	.15	.20	.20	.20	.20
O—Plug.....	.60	.80	1.00	1.25	1.50	1.75	1.75	2.00	2.00
Strainer.....	.40	.45	.50	.55	.60	.75	.75	1.00	1.00

State serial number and letter, found on top of the overflow. In referring to or ordering parts, call them by letter or name as in cut.

B1102

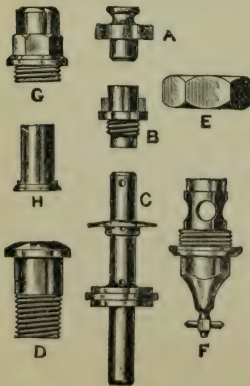


U. S. INJECTOR



B1103

Number	Price, Each	Horse-Power	PIPE CONNECTIONS			CAPACITY, GALLONS PER HOUR	
			Steam, Inches	Supply, Inches	Delivery, Inches	Maximum	Minimum
00	13.00	1 to 4	1/4	1/4	1/4	36	15
0	14.00	3 " 8	3/8	3/8	3/8	65	28
1	16.00	6 " 10	3/8	3/8	3/8	90	40
2	18.00	8 " 15	1/2	1/2	1/2	125	60
3	20.00	15 " 20	1/2	1/2	1/2	170	75
4	25.00	20 " 30	3/4	3/4	3/4	250	125
5	30.00	30 " 40	3/4	3/4	3/4	340	140
6	40.00	40 " 60	1	1	1	475	250
7	45.00	60 " 70	1	1	1	575	300
8	55.00	70 " 95	1 1/4	1 1/4	1 1/4	750	350
9	60.00	85 " 120	1 1/4	1 1/4	1 1/4	920	450
10	75.00	120 " 165	1 1/2	1 1/2	1 1/2	1350	675
11	90.00	165 " 230	1 1/2	1 1/2	1 1/2	1750	850
12	110.00	230 " 295	2	2	2	2275	1000
14	150.00	375 " 460	2	2	2	3400	1700



NET PRICES U. S. INJECTOR PARTS

B1104

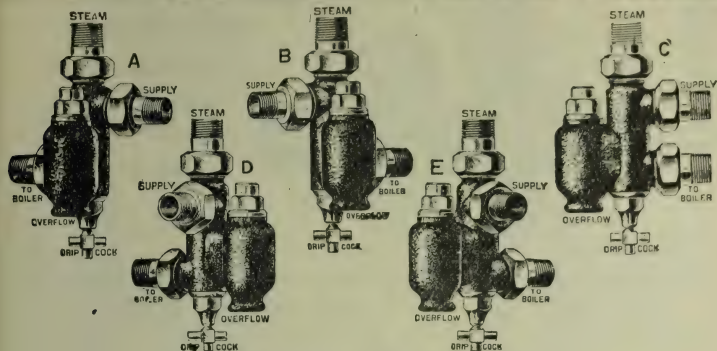
Size Injector....	000 to No. 3	4 and 5	6 and 7	8 and 9	10 and 11	12,13 and 14
D—Tail Pipe.....	.30	.35	.40	.50	.75	1.00
E—Tail Pipe Nut.....	.30	.40	.50	.65	.85	1.20
A—Steam Jet.....	.80	1.00	1.15	1.35	1.60	2.00
B—Suction Jet.....	.50	.75	1.25	1.50	1.75	2.00
C—Delivery Tube.....	1.00	1.10	1.45	1.75	2.00	2.50
F—Delivery Cap.....	1.00	1.10	1.45	1.75	2.00	2.50
G—Overflow Cap.....	.80	.95	1.00	1.25	1.50	2.00
H—Tail Valve.....	.80	.95	1.00	1.25	1.50	2.00

Steam Jet—Subject to little wear and rarely needs renewing.

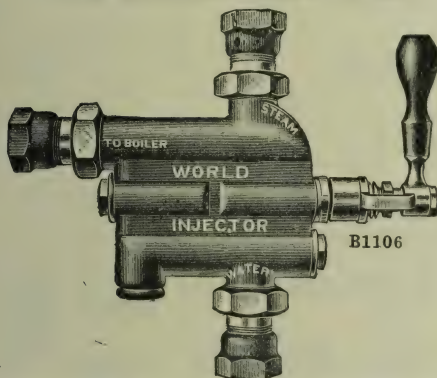
Suction Jet—Subject to considerable wear. (A wrench made of ordinary gas pipe will answer for removing old and inserting new one.)

Delivery Tube—Subject to most wear and most likely to be the first part required.

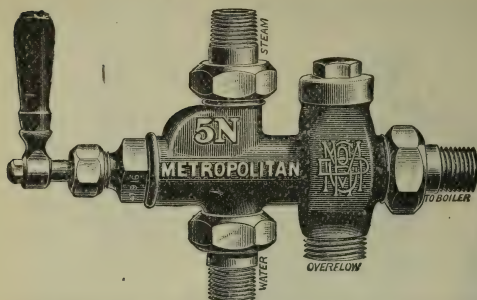
We furnish the **U. S. Traction and Threshing Engine** sizes (Nos. 2, 3, 4, and 5) in any of the following styles when specially ordered. Also "A" and "D" in larger sizes.



## THE WORLD INJECTORS



Number	Price Each	Horse-Power	PIPE CONNECTIONS			Capacity, 80 Pounds Pressure
			Steam, Inches	Suction, Inches	Delivery, Inches	Gallons Per Hour
30	20.00	10 to 15	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	120
40	25.00	15 " 25	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	220
50	30.00	25 " 35	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	300
60	40.00	35 " 50	1	1	1	420
70	45.00	45 " 60	1	1	1	540
80	55.00	60 " 95	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	720
90	60.00	85 " 120	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	900
100	75.00	120 " 165	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	1260
110	90.00	165 " 230	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	1740
120	110.00	230 " 295	2	2	2	2230
130	125.00	295 " 375	2	2	2	2820
140	150.00	375 " 460	2	2	2	3480
150	175.00	465 " 500	$2\frac{1}{8}$	$2\frac{1}{8}$	$2\frac{1}{8}$	3600
160	200.00	500 " 600	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	4000



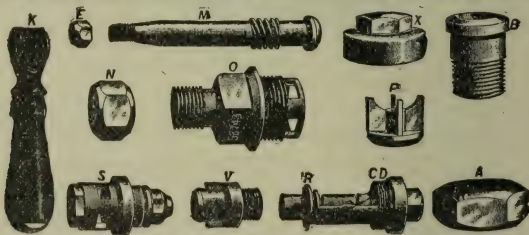
## METROPOLITAN AUTOMATIC INJECTORS

MODEL N

B1109

Sizes	Prices Model N	Size of all Pipe Con- nections	Size Over- flow or Waste Pipe	Capacity with 80 lbs. Steam Pressure 2-ft. Lift, gals.	Horse-Power	
					For theordi- nary Type of Boiler and Engine	Basis of 30 lbs. Evaporation per H. P. per hour
2	15.00	$\frac{3}{8}$	$\frac{1}{4}$	60	4 to 6	5 to 8
3	16.00	$\frac{3}{8}$	$\frac{3}{4}$	80	6 to 8	8 to 12
$3\frac{1}{2}$	18.00	$1\frac{1}{2}$	$\frac{3}{4}$	120	8 to 15	12 to 20
4	20.00	$1\frac{1}{2}$	$\frac{3}{4}$	165	15 to 20	20 to 28
5	25.00	$\frac{3}{4}$	1	250	20 to 30	28 to 40
6	30.00	$\frac{3}{4}$	1	350	30 to 45	40 to 55
7	40.00	1	$1\frac{1}{4}$	500	45 to 65	55 to 80
8	45.00	1	$1\frac{1}{4}$	600	65 to 80	80 to 110
9	55.00	$1\frac{1}{4}$	$1\frac{1}{2}$	800	80 to 100	110 to 145
10	60.00	$1\frac{1}{4}$	$1\frac{1}{2}$	1000	100 to 130	145 to 180
11	75.00	$1\frac{1}{2}$	2	1300	130 to 170	180 to 235
12	90.00	$1\frac{1}{2}$	2	1750	170 to 230	235 to 300
13	110.00	2	$2\frac{1}{2}$	2300	230 to 300	300 to 400
14	125.00	2	$2\frac{1}{2}$	2850	300 to 375	400 to 500

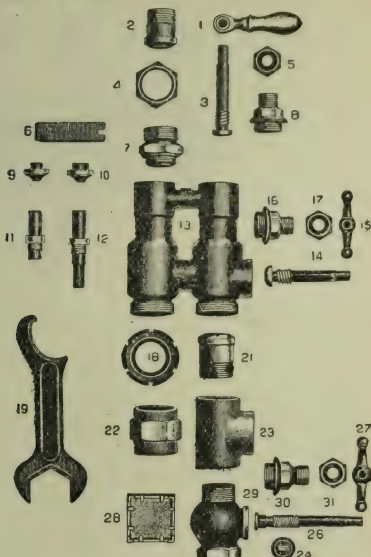
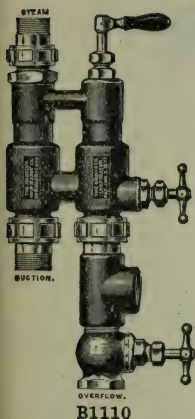
### NET PRICE METROPOLITAN INJECTOR PARTS—Model N and S



Size of Injector, No.....	2-3	$3\frac{1}{2}$ -4	5-6	7-8	9-10	11-12	13-14
S—Steam Jet.....	1.50	1.75	2.00	2.50	3.75	5.00	7.00
V—Suction Jet.....	.60	.70	.90	1.25	1.85	3.00	4.00
C-D-R—Combining and Del- very Tube Auxiliary Check.	1.75	2.10	2.75	3.50	4.50	6.50	9.00
P—Overflow Valve.....	.25	.50	.75	1.00	1.25	1.75	2.50
O—Steam Plug.....	1.00	1.25	1.50	2.25	3.50	5.00	7.00
M—Steam Valve and Stem.	.40	.55	.75	1.10	1.75	2.50	4.00
N—Packing Nut.....	.30	.40	.50	.65	.80	1.00	1.25
K—Steam Valve Handle....	.60	.70	.80	1.00	1.20	1.40	1.60
A—Coupling Nut.....	.60	.80	1.20	1.65	2.40	3.20	5.00
B—Tail Pipe.....	.40	.55	.80	1.20	1.70	2.40	3.40
X—Overflow Cap.....	.50	.75	1.00	1.25	1.75	2.25	3.00
E—Nut for Stem M.....	.10	.10	.10	.15	.15	.15	.20

# HANCOCK INSPIRATORS

## STATIONARY TYPE

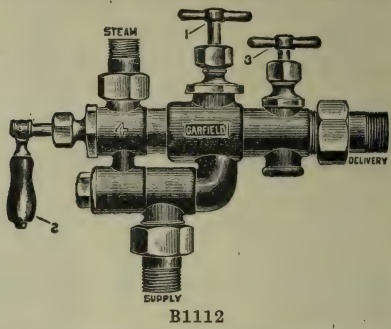


Order repairs by number, and be sure to state size number of inspirator.

Number	Price, Each	HORSE POWER		PIPE CONNECTIONS, INCHES			Capacity, Gals. per Hour, with 60 Pounds Steam Pressure
		For the Ordinary Type of Boiler and Engine	On a Basis of 30 Pounds Evaporation per H. P. per Hour	Steam	Suction and Delivery	Over-flow	
7½	16.00	4 to 6	5 to 8	¾	¾	¼	60
8¾	18.00	6 " 8	8 " 15	¾	½	¾	90
10	20.00	8 " 15	15 " 25	¾	½	¾	120
12½	25.00	15 " 30	25 " 35	½	¾	½	220
15	30.00	30 " 40	35 " 60	½	¾	½	300
17½	40.00	40 " 60	60 " 75	¾	1	¾	420
20	45.00	60 " 75	75 " 100	¾	1	¾	540
22½	55.00	75 " 90	100 " 130	1	1¼	1	720
25	60.00	90 " 120	130 " 175	1	1¼	1	900
30	75.00	120 " 165	175 " 235	1¼	1½	1¼	1260
35	90.00	165 " 230	235 " 300	1¼	1½	1¼	1740
40	110.00	230 " 300	300 " 400	1½	2	1½	2230
45	125.00	300 " 375	400 " 500	1½	2	1½	2820
50	150.00	375 " 500	500 " 650	2	2½	2	3480
55	175.00	500 " 600	650 " 700	2	2½	2	3650

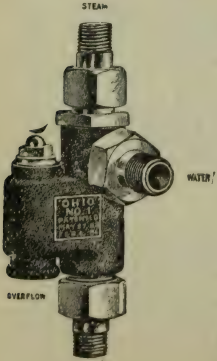


GARFIELD DOUBLE JET INJECTOR



B1112

Number	Price Each	Horse-Power	PIPE CONNECTIONS		Capacity. Gallons Per Hour
			Steam, Inches	Supply and Delivery, Inches	
00	16.00	2 to 5			60
0	18.00	5 " 10	$\frac{3}{8}$	$\frac{3}{8}$	90
1	20.00	10 " 15	$\frac{3}{8}$	$\frac{1}{2}$	120
2	25.00	15 " 24	$\frac{1}{2}$	$\frac{3}{4}$	220
3	30.00	24 " 35	$\frac{1}{2}$	$\frac{3}{4}$	300
4	40.00	35 " 50	$\frac{3}{4}$	1	420
5	45.00	50 " 65	$\frac{3}{4}$	1	540
6	55.00	65 " 90	1	$1\frac{1}{4}$	720
7	60.00	90 " 115	1	$1\frac{1}{4}$	900
8	75.00	115 " 150	$1\frac{1}{4}$	$1\frac{1}{2}$	1200
9	90.00	150 " 200	$1\frac{1}{4}$	$1\frac{1}{2}$	1700
10	110.00	200 " 275	$1\frac{1}{2}$	2	2200
11	125.00	275 " 350	$1\frac{1}{2}$	2	2800
12	150.00	350 " 425	2	$2\frac{1}{2}$	3400
13	180.00	425 " 500	2	$2\frac{1}{2}$	4000
14	200.00	500 " 600	2	$2\frac{1}{2}$	4500



B1113

THE OHIO AUTOMATIC INJECTOR

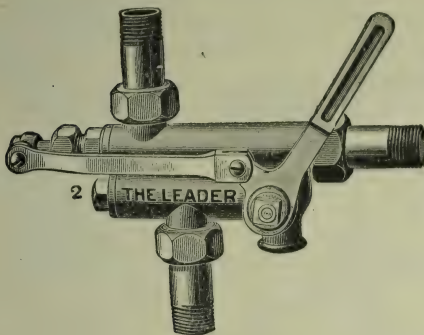
Size No.	IRON PIPE CONNECTIONS			CAPACITIES		Price
	Steam, Inch	Supply, Inch	Delivery, Inch	Gallons Per Hour	Horse Power	
0	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	120	8 to 10	18.00
1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	165	10 " 15	20.00
2	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	250	15 " 25	25.00
3	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	340	25 " 35	30.00
4	1	1	1	460	35 " 60	40.00
5	1	1	1	580	60 " 65	45.00

These capacities are obtained by actual measurements, on the following basis:

Steam, 60 to 80 lbs.; lift 4 feet, and feed water at 76 degrees Fahr. The actual capacities are in excess of the list and fully equal to any of same size, connections and price.

Reduce capacity by use of valve in supply pipe.

## LEADER INJECTOR



B1115

Number	Size of Pipes, Inches		Will Feed Boiler Horse-Power	Delivery per Hour 60 Lbs. Steam Gallons	Price Each
	Steam	Suction and Feed			
1	$\frac{3}{8}$	$\frac{3}{8}$	3 to 7	60	16.00
2	$\frac{3}{8}$	$\frac{3}{8}$	7 " 10	90	18.00
3	$\frac{1}{2}$	$\frac{1}{2}$	12 " 18	150	22.00
4	$\frac{1}{2}$	$\frac{1}{2}$	18 " 25	220	25.00
5	$\frac{3}{4}$	$\frac{3}{4}$	25 " 35	300	30.00
6	$\frac{3}{4}$	$\frac{3}{4}$	35 " 40	400	35.00
7	$\frac{3}{4}$	1	45 " 60	500	40.00
8	$\frac{3}{4}$	1	60 " 70	600	45.00
9	1	$1\frac{1}{4}$	70 " 90	750	55.00
10	1	$1\frac{1}{4}$	100 " 125	1000	65.00
11	$1\frac{1}{4}$	$1\frac{1}{2}$	125 " 125	1300	75.00
12	$1\frac{1}{4}$	$1\frac{1}{2}$	150 " 200	1800	90.00

## CHICAGO AUTOMATIC

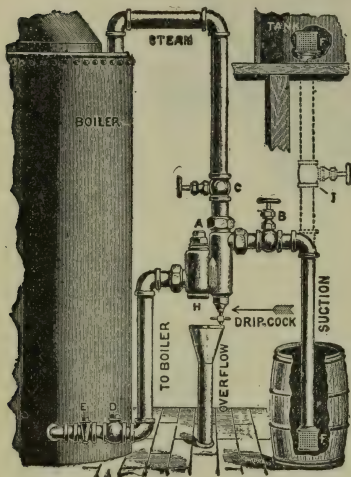


B1116

Size	Pipe Con- nec- tions. Inches	Max. Capa- city per Hour, Gallons	H. P. Based on Ordinary Tubular Boiler	Price Each
00	$\frac{3}{8}$	80	4 to 11	16.00
0	$\frac{1}{2}$	135	10 " 19	18.00
1	$\frac{1}{2}$	180	15 " 24	20.00
2	$\frac{3}{4}$	260	18 " 34	25.00
3	$\frac{3}{4}$	355	20 " 47	30.00
4	1	475	40 " 64	40.00
5	1	600	45 " 80	45.00
6	$1\frac{1}{4}$	800	55 " 106	55.00
7	$1\frac{1}{4}$	1000	75 " 134	60.00
8	$1\frac{1}{2}$	1400	100 " 181	75.00
9	$1\frac{1}{2}$	1900	115 " 254	90.00
10	2	2400	150 " 320	110.00
11	2	3000	190 " 400	125.00
12	$2\frac{1}{2}$	3600	275 " 480	150.00
13	$2\frac{1}{2}$	4200	375 " 560	180.00
14	$2\frac{1}{2}$	4500	400 " 600	200.00

## INJECTORS

### SUGGESTIONS FOR CONNECTING AUTOMATIC INJECTORS



Connect as shown in cut to steam, suction, and delivery. The steam valve "C" should be a globe valve, and may be at any convenient place in the steam pipe.

Always place a globe valve, "B," in the suction pipe, as close to the injector as possible, and place it so that it will shut down against the water side.

When using the injector as non-lifting, put two globe valves in the suction, one close to the injector, the other as far from it as you can conveniently, keeping the one farthest from the injector tolerably close throttled. This will surely repay you for your trouble.

Check valve "D" may be at any point between injector and boiler, the farther from injector the better. If the injector forces through a heater, place check valve between injector and heater.

**Size of Pipe.**—If an injector has over ten feet lift, or a long draw, use suction pipe from strainer "F" to valve "B" a size larger than the connection on injector, reducing when you reach the valve.

In all other cases, use for all pipes same size as injector connection.

**Hint.**—If steam pipe is already in and happens to be one size smaller than injector connection, it will answer, provided it is short and direct.

**Steam.**—Always take steam from the highest point of boiler possible, and never connect to steam pipe used for other purposes.

**Blow-Out.**—Always blow out steam pipe thoroughly before connecting injector, so as to remove any dirt, rust, or scale that may be in the pipes.

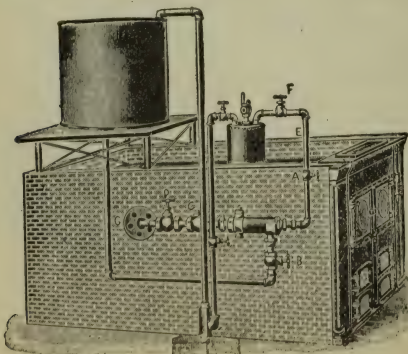
**Caution.**—The suction pipe must be absolutely tight throughout. To make sure that it is, test the suction.

### ATTACHED TO WORK UNDER PRESSURE

Showing method of attaching injector when taking water under pressure from tank overhead, and also for filling tank with ejector.

### To Start the Automatic Injector

Open valve in steam pipe full, then valve in supply pipe only sufficient to give water for the steam to control. Should the injector not have enough or too much water, it will show at the overflow, and must be regulated accordingly.





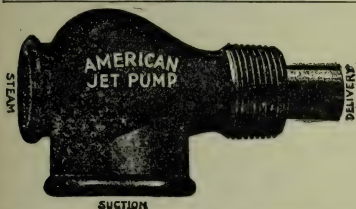
# BLAKESLEE JET PUMPS

B1120

Size of Pump .....	inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Price .....	each	8.00	10.00	12.00	14.00	16.00	20.00	24.00
Suction Pipe .....	inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Discharge Pipe .....	"	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Steam Pipe .....	"	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1
Gallons per Minute .....	"	8	15	20	30	40	50	60

## PARTS OF BLAKESLEE JET PUMPS

Size .....	inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Nuts .....	each	.50	.50	.50	.75	.75	1.00	1.50	1.50
Malleable Nipples .....	"	.25	.25	.25	.35	.35	.60	.75	1.00
Comb. Pipes (loose tubes) .....	"	.75	.75	.75	1.00	1.00	1.50	1.50	1.50
Steam Tubes (tight tubes) .....	"	.25	.50	.50	.60	.60	.75	.75	.75



# AMERICAN JET PUMP

B1121

No.	Size Suction, Inches	Size Delivery, Inches	Steam Connection, Inches	Gallons per Hour	Price
000	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{4}$	150	4.00
00	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{4}$	250	5.00
0	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	375	6.00
1	1	$\frac{3}{4}$	$\frac{1}{2}$	500	7.50
2	$1\frac{1}{4}$	1	$\frac{3}{4}$	1000	10.00
3	$1\frac{1}{2}$	$1\frac{1}{4}$	1	1500	12.50
4	2	$1\frac{1}{2}$	$1\frac{1}{4}$	2000	15.00
5	$2\frac{1}{2}$	2	$1\frac{1}{2}$	2800	17.50
6	3	$2\frac{1}{2}$	2	3800	25.00
7	4	3	2	6500	35.00
8	5	4	$2\frac{1}{2}$	10000	55.00

These Jet Pumps are for filling tanks for Farm or Road Engines; also for Drainage Pumps for Steamboats, Barges, Mines, etc.

## BRASS STRAINERS

For

## INJECTORS AND EJECTORS



Size ..	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.	.40	.50	.60	.75	1.00	1.50	2.00	2.50

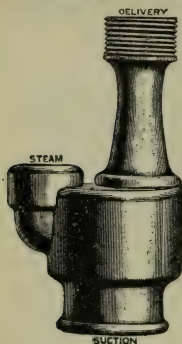


B1122—PIPE

B1123—HOSE



## DRIVE WELL JET PUMP



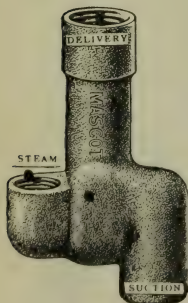
## DRIVE WELL JET PUMP

B1124

Connect in any position to suit convenience of piping, but have the Jet Pump not to exceed 10 to 15 feet above the water level.

This style of Jet Pump is especially intended for use in driven, drilled or bored wells, where it might be impossible to use the ordinary Jet Pump.

No.	Suction, Inches	Delivery, Inches	Steam, Inches	Size Pipe will go in, Inches	Gallons, per Hour	Price
1	1	$\frac{3}{4}$	$\frac{1}{2}$	3	500	7.50
2	$1\frac{1}{4}$	1	$\frac{3}{4}$	$3\frac{1}{2}$	1000	10.00
3	$1\frac{1}{2}$	$1\frac{1}{4}$	1	4	1500	12.50
4	2	$1\frac{1}{2}$	$1\frac{1}{4}$	5	2000	15.00
5	3	2	$1\frac{1}{4}$	....	3800	25.00



## MASCOT EJECTOR

Made in one Size only

Price, \$3.00.

Steam Connection,  $\frac{3}{8}$ -inch; Suction and Delivery,  $\frac{1}{2}$ -inch

Extreme Width of Body,  $2\frac{3}{4}$  inches

Capacity, 300 Gallons per hour

B1125

This Ejector is specially designed to meet the requirements of oil and gas well drillers; the body being made on a curve allows it to drop between inner and outer casings of a drive well.

It will Elevate Water 60 Feet on 75 Pounds Steam



## "XL-96" EJECTOR OR JET PUMPS

B1126

Lifts 22 to 25 Feet. Elevates 50  
to 75 Feet

Number	Price, Brass, Each	Price, Iron Body, Each	Steam Con- nec- tion, Inches	Suction and Dis- charge, Inches	CAPACITY, GALLONS PER HOUR					VERTICAL LIFT FEET
					3 Foot Lift		50 Foot Eleva- tion	25 Foot Eleva- tion		
					STEAM PRESSURE, POUNDS					
					40 to 65	20 to 40 or 65 to 100	40 to 65	40 to 65	40 to 75	25 to 40 or 75 to 100
1	8.00	.....	$\frac{3}{8}$	$\frac{1}{2}$	240	235	120	180	23	20
2	10.00	.....	$\frac{1}{2}$	$\frac{3}{4}$	500	450	250	375	25	22
3	15.00	.....	$\frac{3}{4}$	1	840	700	420	625	25	22
4	20.00	.....	1	$1\frac{1}{4}$	1350	1300	650	950	24	$21\frac{1}{2}$
5	25.00	20.00	1	$1\frac{1}{2}$	1950	1850	975	1450	26	$21\frac{1}{2}$
6	35.00	27.50	$1\frac{1}{4}$	2	3500	3000	1750	2600	26	$21\frac{1}{2}$
7	50.00	40.00	$1\frac{1}{2}$	$2\frac{1}{2}$	5700	4350	2500	3750	26	22
8	70.00	50.00	2	3	9500	8160	4750	7200	25	20
9	105.00	70.00	2	$3\frac{1}{2}$	13600	12400	6800	10200	25	21
10	145.00	95.00	$2\frac{1}{2}$	4	18400	17100	9200	13800	25	21

## TABLE SHOWING SIZE OF BOILERS REQUIRED FOR JET PUMPS

Number of Ejector.....	1, 2, 3	4, 5, 6	7, 8	9, 10
Size Boiler, Horse-Power.....	2 to 6	8 to 12	15 to 20	25 to 30

## GARFIELD EJECTORS



B1127

Num- ber	Price Each	PIPE CONNECTIONS, INCHES			Diam- eter of Well, Inches	Capacity per Hour, Gallons
		Steam	Suction	Deliv- ery		
1	8.00	$\frac{3}{8}$	$\frac{3}{4}$	$\frac{1}{2}$	$2\frac{1}{4}$	300
2	10.00	$\frac{3}{8}$	1	$\frac{3}{4}$	$2\frac{3}{4}$	500
3	15.00	$\frac{1}{2}$	$1\frac{1}{4}$	1	3	800
4	20.00	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	$3\frac{1}{2}$	1300
5	25.00	1	2	$1\frac{1}{2}$	$4\frac{1}{2}$	2000
6	35.00	$1\frac{1}{4}$	$2\frac{1}{2}$	2	5	3000
7	50.00	$1\frac{1}{2}$	3	$2\frac{1}{2}$	6	5000
8	60.00	$1\frac{1}{2}$	3	$2\frac{1}{2}$	6	6500

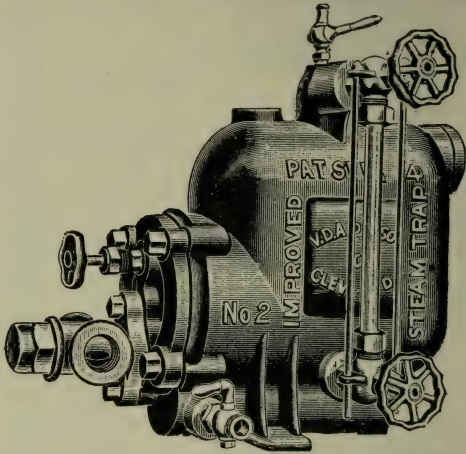
The Garfield Ejector is so constructed that all connections are made from straight pipes screwed directly into the Ejector, and is specially designed for driven and drilled wells.

For raising water from deep wells, mines or pits, filling or emptying tanks, raising and transferring liquids, hot or cold, in tanneries, dye houses, etc., it is not surpassed.

To CONNECT.—Attach as shown in cut in upright position. Ejector being suspended by the delivery and steam pipes. The suction pipe must be tight, and if lift of more than 10 feet, a size larger than listed should be used.

ANDERSON IMPROVED STEAM TRAPS

ATMOS-  
PHERIC  
PRES-  
SURE  
LOW  
PRES-  
SURE

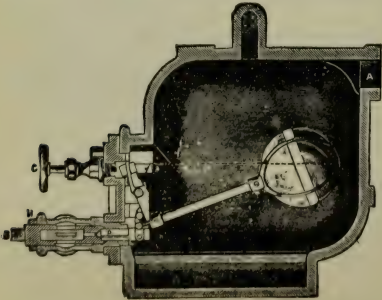


HIGH  
PRES-  
SURE  
TO 150  
POUNDS

B1128

Three different classes as stated above; indicate which is wanted or state steam pressure

Size Number of Trap.. ....	1	2	3	4	5	6	7
Price .....	20.50	22.50	28.00	35.00	50.00	70.00	120.00
Size of Pipe connection, in inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Maximum discharge of condensation, per hour in pounds.....	750	1,200	2,000	2,800	4,000	6,000	12,000
Greatest number of square feet of surface that should be applied.....	500	800	1,300	2,350	3,500	5,000	10,000
Greatest number of lineal feet of 1-inch pipe surface that should be applied....	1,500	2,500	4,000	7,000	10,000	15,000	30,000
Shipping Weight, in pounds (boxed).....	54	67	93	112	145	190	440



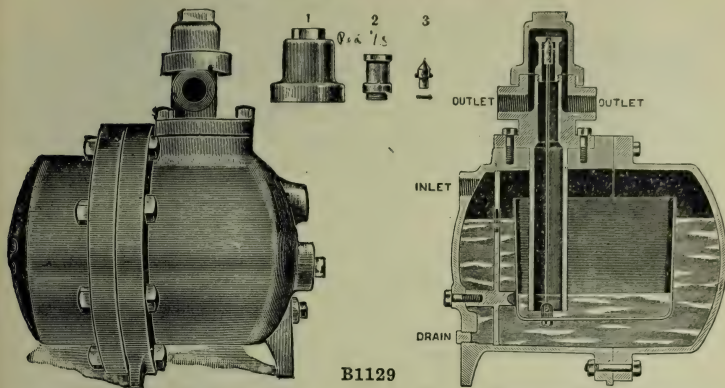
Sectional View

**Note** — Standard Trap will work at any pressure, from 150 pounds down, but for low pressure service we can furnish the trap with extra large valve outlet; hence in ordering, indicate approximate pressure under which trap is to be operated.

Every Trap is carefully tested under pressure before leaving factory.

Glass water gauge shows at a glance whether trap is working properly or not. These traps work against any back pressure less than the pressure at the trap. Made for High or Low Pressure, or Exhaust Steam.

# THE SQUIRES STEAM TRAP



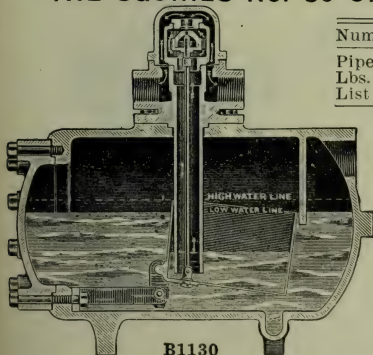
B1129

Gravity Trap for 10 Pounds or less. Low Pressure Trap for 10 to 30 Pounds. Standard Pressure Trap for 30 to 125 Pounds. High Pressure Traps for 125 Pounds and up

State highest pressure under which trap is to be operated.

Number.....	0	1	2	3	4	5
Price.....each	20.00	22.00	28.00	35.00	50.00	70.00
Size Pipe Connection .....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Capacity, Lineal feet 1-inch Pipe...	3000	4000	6000	10000	15000	25000
“ Square “ Radiation.....	900	1300	2000	3300	5000	8300
“ Pounds of Water per hour	300	500	725	1200	2000	3000

# THE SQUIRES No. 50 UNLIMITED STEAM TRAP



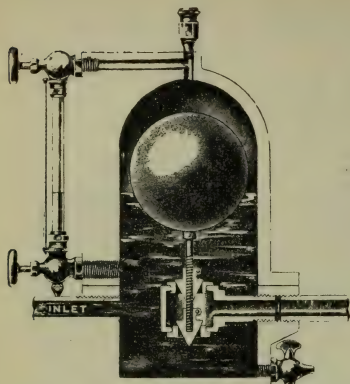
B1130

Number.....	30	40	50
Pipe Connection ...	$1\frac{1}{2}$ in.	2 in.	$2\frac{1}{2}$ in.
Lbs. Water per hour	5000	10000	20000
List Price .....	70.00	90.00	120.00

This Trap works equally well at any pressure from 0 to 300 pounds steam.

It is adapted to take care of large bodies of condensation in cooking kettles, etc., where there is a low steam pressure and a large amount of condensation in starting and a high pressure when apparatus is heated, and main headers of large power plants or any condition where there is an excessive amount of condensation.





## THE DURAM SPECIAL STEAM TRAP

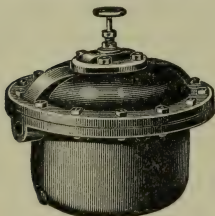
B1131

Designed Especially for Central  
Station Heating

Size Inlet and Outlet.....	$\frac{3}{4}$ in.	1 in.	$1\frac{1}{4}$ in.	$1\frac{1}{2}$ in.	2 in.
Pounds Discharged per Hour .....	2500	4000	6000	8000	16000
Square Feet Radiation.....	1500	2500	4000	6000	12000
List, Price Complete.....	25.00	28.00	35.00	45.00	60.00

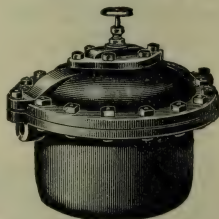
Low Pressure from 0 to 15 lbs. Standard Pressure from 15 to 100 lbs. High pressure from 100 to 150 lbs.

### NASON PATTERN



B1132

### SIDELUG TRAP

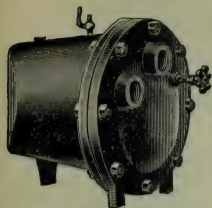


B1133

Number .....	1	2	3	4	5
Nason Pattern Trap.....each	16.00	20.00	27.50	42.50	70.00
Sidelug Trap....."	16.85	21.30	29.25	45.50	74.75
Capacity, Lineal Feet of 1-inch Pipe .....	1050	2700	4200	6000	10500
" Square Feet of Radiation.....	350	900	1400	2000	3500
Maximum Discharge per Minute.....pounds	2	5	8	12	20
Inlet and Outlet..... inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$

Nason Traps are for pressures up to 70 pounds; Sidelug Traps, up to 150 pounds.

STANDARD



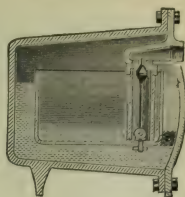
KIELEY STEAM TRAPS

Low Pressure

High Pressure

\*Extra High Pressure

SECTIONAL



B1135

Number .....	1	2	3	4	5	6	7
Price.....each	25.00	35.00	45.00	60.00	80 00	100 00	125.00
Capacity, Lineal Feet of 1-inch Pipe.....	4000	6000	10000	15000	25000	35000	50000
“ Square Feet of Radiation .....	1300	2000	3300	5000	8300	11500	16500
“ Pounds of Water... ..per hour	500	725	1200	2000	3000	4000	6000
Inlet and Outlet.....inches	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3

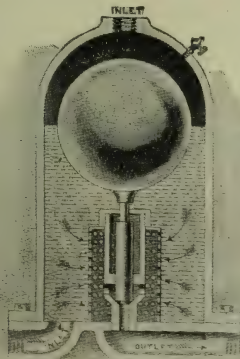
\* **Extra High Pressure Traps** are made in No. 2, 3, 4, 5, and 6 sizes, and intended for pressures of from 125 to 250 pounds per square inch. List price and connections same as above. Capacity, pounds water per hour: No. 2, 3,100; No. 3, 4,700; No. 4, 6,300; No. 5, 8,000; No. 6, 9,500.

The Low Pressure Traps are intended for 1 to 30 pounds pressure.

The High Pressure Traps are intended for 30 to 125 pounds pressure

The greatest possible capacity is obtained from these traps when they are working on a pressure the same as or approximately close to the pressure stamped on brass plate which is affixed to each of our traps. They should never be applied to pressures higher than that stamped on this plate. They will work satisfactorily on lower pressures down to one pound, but with a proportionately decreased capacity.

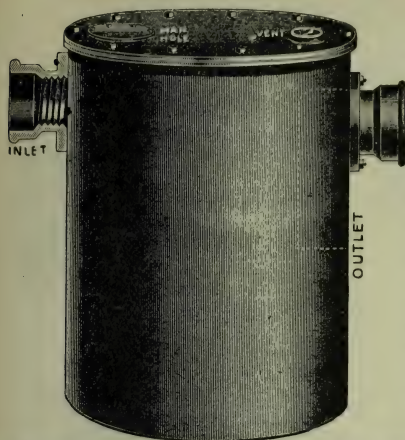
NEW LOW PRESSURE GREASE TRAP



B1137

Price list same as Kieley Traps top of page.





## CAST IRON BLOW-OFF AND GRAVEL BASINS

**B1145**

Standard Blow-off Basins are fitted with one 4-inch Combination Screws and Soil pipe inlet, 4-inch Outlet with Seal, one 2-inch vapor vent and man-hole in cover. We will fit basins to your specifications with 4-in., 6-in. or 8-in. Hubs or Flanges—openings less than 4-in. will be fitted with Flanges. Fittings other than Standard will be charged extra. Flusher attached to Basin when ordered.

Diameters.....inches	24	26	30	36	42	48
Height, 30 inches.....	39.00		48.00			
“ 32 “.....		44.00				
“ 36 “.....	43.00		52.00	63.00		
“ 38 “.....		48.00				
“ 42 “.....	47.00		58.00	70.00	84.00	
“ 44 “.....		52.00				
“ 48 “.....	51.00		62.00	77.00	91.00	102.00
“ 50 “.....		60.00				
“ 54 “.....	55.00		67.00	84.00	98.00	110.00
“ 56 “.....		70.00				
“ 60 “.....	60.00		72.00	91.00	105.00	119.00
“ 66 “.....						128.00
“ 72 “.....						138.00

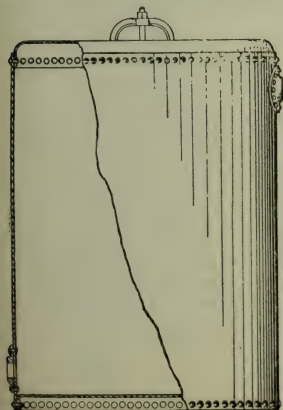
## LEADER BLOW-OFF RECEIVERS

PRICE LIST				
Diameter Inches	Length Inches	Thickness Steel	Capacity Gallons	Price
20	24	$\frac{1}{4}$	34	48.00
24	24	$\frac{1}{4}$	47	55.00
30	24	$\frac{1}{4}$	73	62.00
30	30	$\frac{1}{4}$	90	64.00
36	30	$\frac{1}{4}$	130	73.00
36	36	$\frac{1}{4}$	160	75.00
36	48	$\frac{1}{4}$	210	80.00

Price includes Manhole and two Marine Flanges.

If Handhole is furnished instead of Manhole, deduct **\$2.50**, net.

In ordering, give size and location of openings wanted.

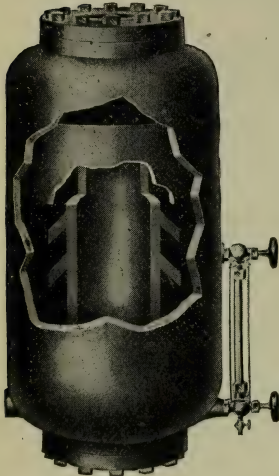


**B1146**



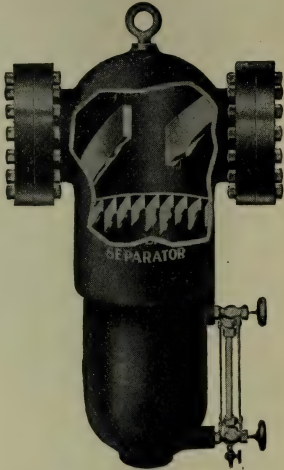
GREENAWAY SEPARATORS

TYPE A



B1147

TYPE C



B1148

Also made Angle Pattern at special price.

Vertical and Horizontal, for Working Pressure of 200 Pounds

Sizes .....	inches	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Price .....	each	35.	45.	50.	55.	65.	70.	75.	85.	105.	125.	160.	220.	250.
Face to Face Vertical .....	in.	15½	16	16	18	19	20	21½	22½	25	28	31	36½	39
Horizontal .....	"	7	8	9¾	10½	12¼	12½	14¼	14½	16¾	18¾	20½	24	30
Diam. of Vertical .....	"	7	7¼	8	8¾	11¼	11¾	13¼	14	16	18	19½	25	30
Height of Horizontal .....	"	11	14	18½	21¼	22½	23½	26¾	28	32	34	39	43	50
Center to Bottom of .....	"	8½	11	15	15½	16	17	18¾	19¾	21½	24½	28	31	35

Price includes Companion Flanges, Bolts, Water Gauge and Drip Valve.

For Heavy Duty Separators, Steel Shell Separators, "Special" Oil Separators, Compressed Air Separators, and Ammonia Separators, see bottom next page.

GREENAWAY OIL SEPARATORS

Exhaust Service. For Non-Condensing Engines

Same patterns, dimensions and list prices as above.

B1149—Vertical, known as Type L. B1150—Horizontal, known as Type M

The Vertical Oil Separator is constructed for decending steam currents.

See bottom of next page for Greenaway Separators for Special Purposes.

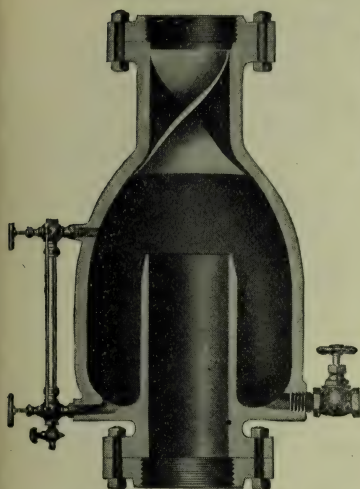
GREENAWAY SPECIAL OIL SEPARATOR

Horizontal. Type N, with Wet Plates. Type O, with Dry Plates

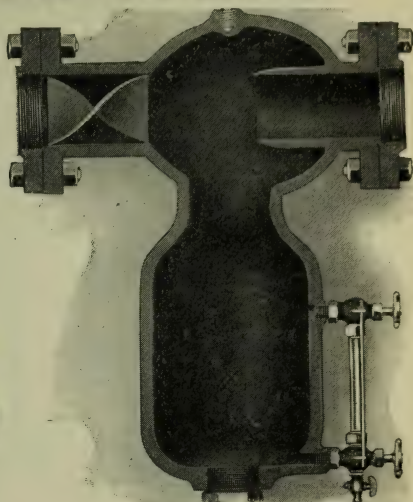
Separates every particle of oil from the steam; has special facilities for cleaning without breaking pipe connections.

Prices and dimensions quoted on application.

## "SWARTWOUT" STEAM SEPARATORS



B1154—VERTICAL



B1155—HORIZONTAL

Inches.....	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Each.....	25.	35.	45.	50.	60.	70.	80.	95.	120.00	140.00	175.00	250.00	300.00
Face to Face....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vertical...inches	13	14½	16¾	19	21	22½	25¾	27¾	29¼	34½	37	44½	49½
Horizontal "	12¼	13½	14¾	16¾	18	20	22	23½	27	30½	34	37½	38¾

1-inch, also 9-inch sizes quoted on application.

Price includes flanges, bolts, water gauge, drip valve and nipple.

Horizontal 6-inch and larger are cast in two sections—the drip pot being flanged and attached with bolts and gasket at neck.

(Continued from preceding page.)

## GREENAWAY HEAVY DUTY SEPARATORS

For Working Pressure of 250 Pounds

Type B, same Style as Type A—Vertical

Type D, same Style as Type C—Horizontal

Type B and D are of similar design to Type A and C, but are of heavier construction, and dimensions are slightly different.

Size.....inches	2	2½	3	3½	4	4½	5	6	7	8	10
Price.....each	55.	65.	70.	75.	85.	105.00	125.00	160.00	185.00	220.00	250.00

Including companion flanges, bolts, water gauge and drip valve.

Also made Angle Pattern at special price.

## GREENAWAY STEEL SEPARATORS

Constructed of Boiler Sheets, Riveted

10-inch to 24-inch Sizes, for 250 Pounds Working Pressure

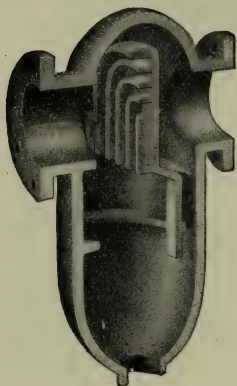
Style F Vertical. Style E Horizontal

Prices and Dimensions quoted on application.

## WEBSTER STEAM AND OIL SEPARATORS

### STEAM SEPARATORS

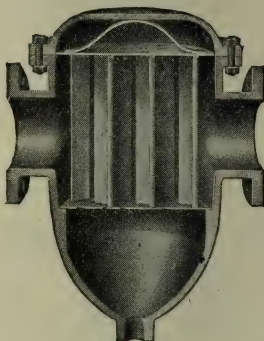
#### HORIZONTAL—CLASS C



B1156

### OIL SEPARATORS

#### STANDARD HORIZONTAL



B1157

Only two patterns are here illustrated.

Write for special catalogue giving dimensions, complete description, and duty of the different types. Prices are quoted on application. State fully the conditions and requirements.

Classes C (Horizontal) and B (Vertical) are of cast iron construction, intended for ordinary service, where it is desired to separate the moisture from live steam and prevent a large amount of condensation from being carried into the engine cylinder. They are designed for a maximum working pressure of 150 pounds to the square inch. The vertical separator, Class B, is for downward flow of steam only, and is made in sizes from 2-inch to 6-inch. Horizontal, Class C, is made in sizes from 2-inch to 12-inch.

Class A, horizontal, and Class D, vertical (not illustrated), are for maximum working pressure of 250 pounds. They are of combination steel and cast iron construction. Class A is made 8-inch to 20-inch sizes. Class D is made 2 to 16-inch sizes, and for downward flow of steam only.

### OIL SEPARATORS

Illustration is of the Horizontal 8-inch to 16-inch style, the 2-inch to 6-inch pattern having a round instead of a square body.

These Oil Separators can also be furnished for condensing service. Sizes 8-inch to 20-inch can be furnished of combination steel and cast iron construction.

Oil Separators are also made **Vertical Pattern**, and all styles and sizes are fully described in special Webster catalogue of Separators.

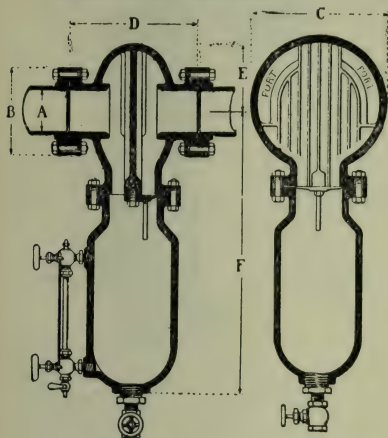
## COCHRANE SEPARATORS

## HIGH PRESSURE STEAM

## STANDARD OIL SEPARATOR

## HORIZONTAL PATTERN

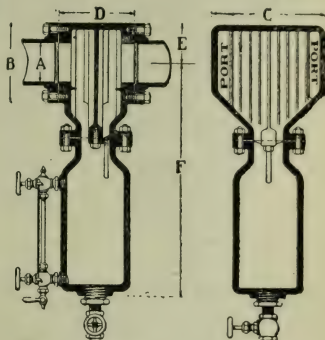
## HORIZONTAL PATTERN



SIDE SECTION

END SECTION

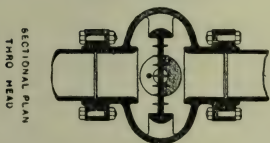
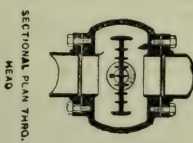
B1158



SIDE SECTION

END SECTION

B1159

SECTIONAL PLAN  
THRO. HEADSECTIONAL PLAN THRO.  
HEAD

**Vertical Separators** also furnished.

Net prices quoted on application. State conditions and requirements.

Special Catalogue of Cochrane Separators giving complete description, etc., furnished on application.

The High Pressure Steam Separator is for Steam, Compressed Air, etc., for any pressure up to 200 lbs. per square inch. Special patterns made for higher pressure.

**Receiver Pattern Separator**, having capacity for large amount of condensation, in Horizontal Vertical pattern, described in the special catalogue. The horizontal 3 to 7 inch sizes are cast iron, larger sizes and vertical are partially of wrought steel construction.

**Standard Oil Separator**, Horizontal or Vertical, is intended for the exhaust of non-condensing engines, and for use on live steam mains of pressure not over 125 lbs.

**Cochrane Vacuum Oil Separator**, (not illustrated) is of entirely different design from above illustrations. They take the oil out of exhaust from condensing engines and the vacuum is not interfered with.

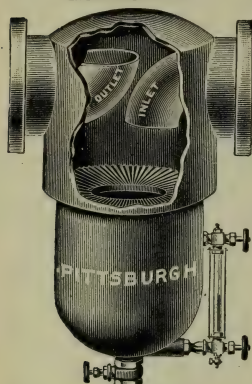
Write for Cochrane Separator Catalogue.



# "PITTSBURGH" STEAM AND OIL SEPARATORS

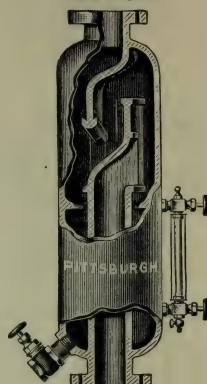
For Live or Exhaust Steam

HORIZONTAL



B1160

VERTICAL



B1161

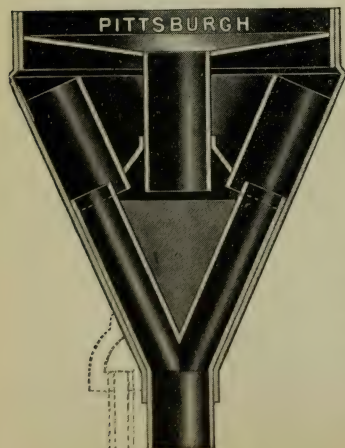
Pipe Size .....inches	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Price.....each	30.	40.	45.	50.	60.	70.	75.	80.	110.	125.	160.	220.	250.
Between { Horizontal...	Screwed		9½	10	12¼	12¼	14½	14½	17½	18¾	20½	26	30¼
Flanges, in. { Vertical.....	Ends		19½	22½	26¾	26¾	30¾	30¾	34½	39	44	49	54

Horizontal Pattern also made 14-inch, \$300.00; 16-inch, \$400.00.

Prices include Flanges with Bolts and Nuts, Water Gauges, Outlet Valve, and Connection.

Made of best quality of gray iron. Extra heavy throughout and tested to 250 pounds hydrostatic pressure.

Steel Receiver Separators Constructed for Special Conditions



## "PITTSBURGH" VACUUM EXHAUST HEAD

B1162

Exhaust Pipe	1 or 1½	2 or 2½	3 or 3½	4 or 4½	5	6	7
Each.....	20.	25.	30.	40.	50.	60.	75.
Exhaust Pipe	8	9	10	12	13	14	....
Each.....	90.	105.	125.	150.	175.	200.	....

15-inch, \$235.00; 16-inch, \$250.00; 17-inch, \$270.00; 18-inch, \$300.00. Larger sizes on application.

Six-inch and larger sizes are flanged, and provided with Companion Flanges and Bolts.

**GREENAWAY CAST-IRON EXHAUST HEAD****B1163**

Size of Exhaust Pipe	1¼	1½	2	2½	3	3½	4	4½	5
Price.....	10.00	11.00	13.00	14.00	16.00	18.00	21.00	24.00	28.00
Size of Exhaust Pipe	6	7	8	9	10	12	14	16	18
Price.....	34.00	42.00	58.00	72.00	88.00	120.00	180.00	230.00	270.00

Heads up to and including four inches are screwed ends, sizes above four inches are flanged and supplied with companion flange and bolts.

Larger sizes quoted on application.

**GALVANIZED EXHAUST HEAD****B1164**

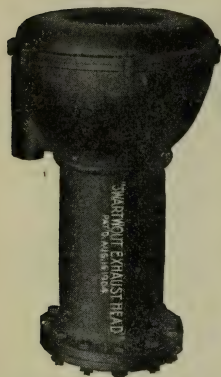
Size of Pipe...inch.	1 or 1½	2 or 2½	3 or 3½	4 or 4½	5	6	7	8	9	10	11 or 12	14	15	16	18
Price.....	20	25	30	40	50	60	75	90	105	125	150	200	235	250	300
Drip Outlet to Head...inch.	1¼	1½	1½	1½	2	2	2	2½	2½	2½	3	3	3½	3½	4

Sizes 9-inch and less have screwed coupling; larger size flanged. Companion flange not included in price.

Larger sizes quoted on application.

## SWARTWOUT EXHAUST HEADS

CAST IRON



B1165

CONDENSER TYPE

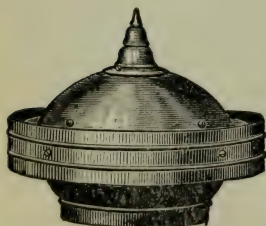


B1166

Exhaust Pipe .....inches	1 or 1½	2 or 2½	3 or 3½	4 or 4½	5	6	7	8	10
Price.....each	20.00	25.00	30.00	40.00	50.00	60.00	75.00	90.00	125.00
Exhaust Pipe .....inches	12	14	16	18	20	22	24	30	36
Price.....each	150.00	200.00	250.00	300.00	360.00	450.00	600.00	900.00	1200.

Sizes 5 inch and less are screwed. Larger sizes are flanged with companion flanges and bolts.

These heads are put together in sections, having a joint just below the drip.

GLOBE VENTILATOR  
Galvanized Iron

B1167

PROPELLER FAN  
With Electric Motor

B1168

Quoted on application.

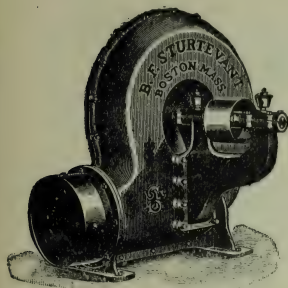
## GLOBE VENTILATORS

Size....ins.	2	3	4	5	6	8	10	12	14	16	18	24
Each.....	1.00	1.50	1.75	2.50	3.40	4.65	5.75	6.75	13.00	20.00	7.00	40 00

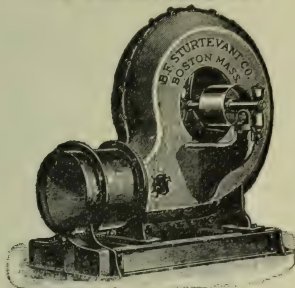
Also other sizes, up to 60-inch, quoted on application.

# STURTEVANT MONOGRAM BLOWERS AND EXHAUSTERS

ON ADJUSTABLE BED



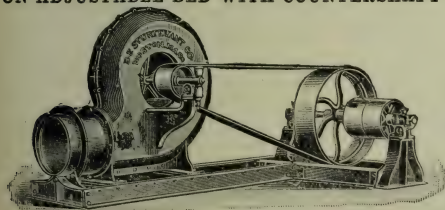
B1169



B1170

Number	SIZE OF PULLEY		WITHOUT ADJUST- ABLE BED			ON ADJUSTABLE BED				
	Diam- eter, Inches	Face, Inches	Outside Diam- eter of Outlet, Inches	Outside Diam- eter of Inlet of Ex- haust, Inches	Price Each	No Counter- shaft		With Countershaft		
						Outside Diam- eter of Outlet, Inches	Price Each	Diam- eter of Pulley Driving Blower, Inches	Diameter of Pulley Driven by Main Belt from Line Shaft, Inches	Price Each
0000	1 $\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{3}{4}$	3 $\frac{5}{8}$	12.00	....	.....	....	.....	.....
00	2 $\frac{3}{8}$	1 $\frac{1}{2}$	4 $\frac{1}{8}$	4 $\frac{1}{2}$	15.00	....	.....	....	.....	.....
0	3	2 $\frac{1}{2}$	4 $\frac{3}{4}$	5 $\frac{3}{4}$	20.00	....	.....	....	.....	.....
1	3 $\frac{1}{2}$	2 $\frac{1}{2}$	5 $\frac{3}{4}$	6 $\frac{1}{2}$	26.00	....	.....	....	.....	.....
2	4 $\frac{3}{8}$	3 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	33.00	....	.....	....	.....	.....
3	5 $\frac{1}{8}$	4	9	9	44.00	....	.....	....	.....	.....
4	6	4 $\frac{3}{4}$	10 $\frac{1}{2}$	10 $\frac{1}{2}$	55.00	11 $\frac{3}{8}$	90.00	28	10, 12, 14,	120.00
5	6 $\frac{7}{8}$	5 $\frac{1}{4}$	12 $\frac{1}{4}$	12 $\frac{1}{4}$	70.00	13 $\frac{1}{8}$	115.00	32	12, 14, 16,	160.00
6	8	6 $\frac{1}{2}$	14 $\frac{1}{2}$	15	90.00	15 $\frac{1}{2}$	150.00	36	12, 14, 16, 18,	210.00
7	8 $\frac{7}{8}$	7 $\frac{1}{2}$	16 $\frac{1}{2}$	16 $\frac{3}{8}$	150.00	17 $\frac{3}{8}$	240.00	42	14, 16, 18, 20,	325.00
8	10 $\frac{1}{4}$	8 $\frac{7}{8}$	18 $\frac{3}{4}$	18 $\frac{5}{8}$	200.00	20 $\frac{3}{4}$	315.00	42	18, 20, 22, 24,	425.00
9	12	10 $\frac{1}{2}$	21 $\frac{1}{2}$	21 $\frac{1}{2}$	250.00	23 $\frac{1}{4}$	415.00	48	18, 20, 22, 24,	550.00
10	13 $\frac{3}{4}$	11 $\frac{1}{4}$	24 $\frac{3}{8}$	24 $\frac{1}{2}$	325.00	25 $\frac{3}{4}$	550.00	54	18, 20, 22, 24,	750.00

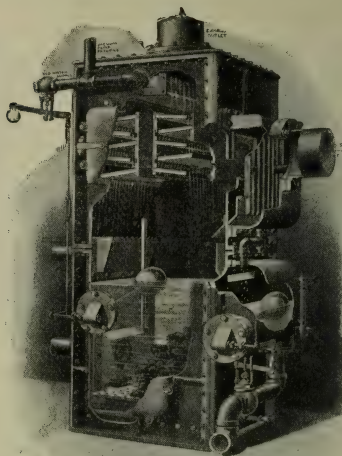
## ON ADJUSTABLE BED WITH COUNTERSHAFT

B1170 $\frac{1}{2}$ 

The Monogram Fans, so called because of monogram "B. F. S." on side, are built either as Blowers, with two inlets and a bearing on each side, or as Exhausters with inlets on pulley side closed.

Pressure Blowers, and Exhaust Fans of any style and for all purposes quoted on specification.



**COCHRANE FEED-WATER HEATERS**

B1172

**THE COCHRANE SPECIAL FEED-WATER HEATERS AND RECEIVERS**

Which take the place of independent oil separators and traps, closed feed-water heaters and traps, expansion and return tanks, and pump governors.

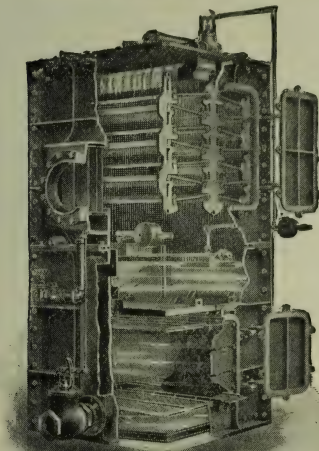
Sizes: Horse-power 50, 75, 100, 150, 200, 250, 300, 450. Prices quoted on application.

**CONSTRUCTION DETAILS**

This design of the Cochrane Heaters is specially adapted for use in connection with any kind of an exhaust steam heating or drying system—under vacuum, under back pressure, etc. Besides performing all the regular functions of an open or direct contact feed-water heater, it provides for the reception and heating of the condensation returned to it from the heating system. The supply of cold water required to supplement the exhaust condensed in the heater and the returns from the heating system, is accurately and automatically regulated. The drip from oil separator and the overflow from heater are passed to waste through a steam trap forming a part of the heater. The construction gives the greatest possible durability and longevity, with freedom from repair, with ease of operation and with facilities for thorough and rapid cleaning.

Other models of Cochrane Heaters and Purifiers quoted on application. State clearly duty required. Write for descriptive catalogue.

**WEBSTER STAR-VACUUM  
FEED WATER HEATER, PURIFIER, FILTER, AND  
RECEIVER**



B1175

**CLASS "E. C." TYPE**

**For Boilers of 50 to 450 Horse-Power**

An exhaust steam feed water heater in combination with a filter and precipitating chamber and oil separator complete. The water supply to the heater and overflow are controlled automatically. When desirable a special boiler feed-pump governing-valve may be furnished instead of the regular float regulator.

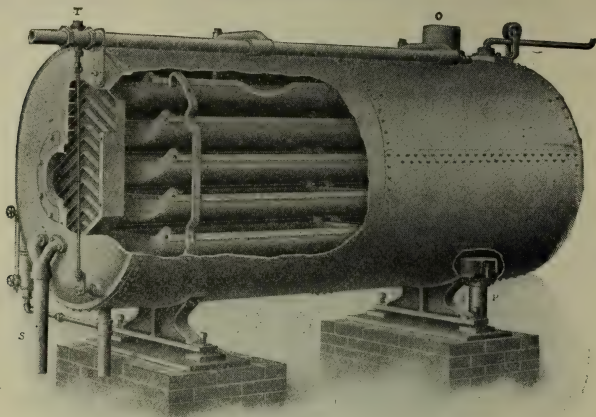
For Capacities of 500 to 5,000 H. P., the above heater, filter, receiver, and oil separator is made in horizontal cylindrical shape, known as Class "E. D." style.

Webster "Star-Vacuum" Feed Water Heater and Purifier, Class "A," is a heater, purifier, and oil separator, but has no filter attachment, is for 50 to 650 H. P. boilers. When intended for pressure from atmosphere to 10 pounds, especially for low pressure steam heading, a heater known as Class "E. A." is made.

The Webster Feed Water Heater and Chemical Purifier is fully described in a special circular which will be furnished on application.

Prices of Webster Heaters, etc., quoted on application. State conditions and requirements fully. We can furnish special catalogue giving full description of each style apparatus.

## HOPPES FEED-WATER HEATER AND PURIFIER STANDARD TYPE



### B1177

Prices and descriptive catalogue furnished on application. State conditions and requirements, and horse-power.

Write for special catalogue of Hoppes Heaters. It fully describes the different patterns, etc.

The cut illustrates the standard steel pan open type of Feed-Water Heater. This Heater is designed somewhat after the Purifier in that the same form and style of pans are used. The shell is of steel plate, and heads are of cast iron, the front one being removable for taking out the pans for inspection or cleaning.

The exhaust steam enters at the back end, and after passing through the large oil eliminator, the purified steam enters the Heater proper, from which it escapes through the pipe O at front end.

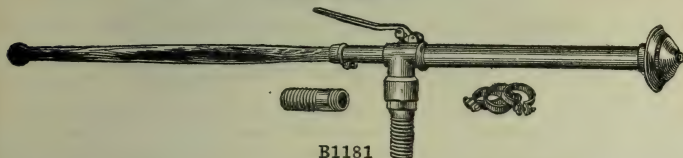
The water, on entering the Heater at T, is fed into the top pan, and, overflowing the edges, follows the under side of the pan to near center, when it drops into the next pan below. It flows over each successive pan in the same manner until it reaches the chamber at the bottom, from which it passes to the pump through pipe P.

While the Heater is in operation, the water flowing along the under side of the pans comes in direct contact with the exhaust steam passing through the Heater, and in this manner the water is heated without the heat having to pass through the pans or lime already formed thereon.

The insides of the pans afford settling chambers for the mud and solids in suspension, while the lime and other solids in solution form on the under side of the pans. The water is thus not only heated to the highest degree obtainable by exhaust steam, but all of the solids that are separated at that temperature are caught and retained in the Heater.

# STEAM FLUE BLOWERS

## RED JACKET



B1181

Number.....	1	2	3	4	5	6
Outside Diam. Tube.....inches	2 to 2½	2½ to 3¼	3 to 3½	3½ to 3¾	4 to 4½	5 to 6
Price .....each	5.00	6.25	7.50	8.75	10.00	12.50
Size Hose.....inches	½	¾	1	1	1¼	1½

Hose is extra.

## REVERSIBLE BLOWER OR SUCTION VACUUM



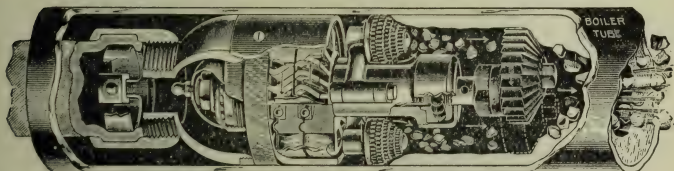
B1182

Tube ... ..inches	2	2½	3	3½	4	4½	5
Price, with Handle... each	13.50	14.00	14.50	15.00	15.50	16.00	16.50

Price does not include hose and couplings.

If without Handle and Fittings, deduct \$3.50.

## GOODFELLOW'S PATENT WATER TUBE CLEANER



B1183

For 3-inch Tube, \$65.00. For 3½-inch Tube, \$70.00. For 4-inch Tube, \$75.00.

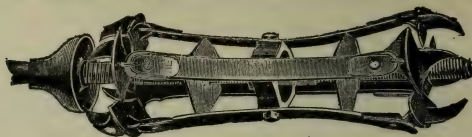
Above measurements are outside diameter of tubes.

Price does not include hose and auxiliary tools.

Designed to be driven by water and is the only cleaner of its type that has double turbine power wheels. The first power drives the ruffer-out tool, which is revolved and gyrated around upon its crank shaft, leaving the scale at a minimum thickness. The second power drives the finishing cutters in opposite directions. In the movement of these three cutters they are pushed out and do not depend upon centrifugal force. Each set of cutters have a blank follower wheel which prevents the larger cutter of the sets from acting upon the tube surface.

They are made of the best steel and bronze, with or without ball bearings, are self-oiling, and work quickly through the scale of any mineral formation. They may be had with novel auxiliary tools adapted to make connections with the central shaft, and by a flexible shaft may be projected far in advance of the power head, a feature never before used on any other cleaner of its type.



**ENGINEERS' FAVORITE TUBE SCRAPER****B1184**


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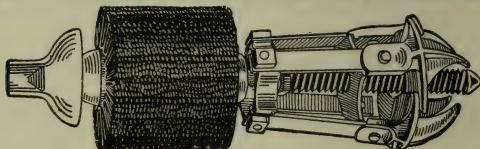


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Sizes, 1½ to 4-inch (outside diameter of tube).....per inch | 1.00

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Smaller sizes than 2 inch are priced same as 2 inch.

**COMBINATION TUBE BRUSH AND SCRAPER****B1185**


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Sizes, 2 to 6 inches (outside diameter of tube).....per inch | 1.00

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**PERFECT TUBE CLEANER****B1186**


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Sizes, 2 to 4 inches (outside diameter of tube).....per inch | 1.00

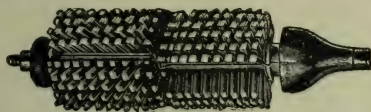
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**RUGGLES PERFECTION TUBE CLEANER****B1187**

Size (outside diam. of tube) .....inches	2 or less	2¼	2½	2¾	3	3¼
Each .....	2.00	2.25	2.50	2.75	3.00	3.25
Size (outside diam. of tube) .....inches.	3½	4	4½	5	6	....
Each .....	3.50	4.00	5.00	6.00	7.00	....

Wire Cable Flexible Handles, 12 to 18 feet long. Each \$4.00.

# EXPANSION WIRE TUBE BRUSHES

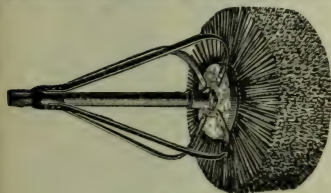


B1188

Price per inch (outside diam. of tube)..... 1.00

Sizes, 1½-inch to 9-inch. Smaller than 2-inch is priced as 2-inch.

## LARGE WIRE FLUE BRUSH



B1189

Per inch Diameter. \$1.00.  
 Sizes, 8-inch to 36-inch Flues.

## SPIRAL WIRE TUBE BRUSHES



B1190

Per inch outside diameter of Tube, \$1.00.  
 Made 1½ to 4-inch sizes.

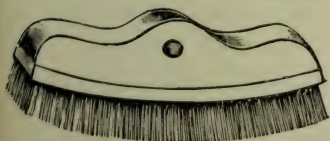
## FOLDING RODS FOR BOILER TUBE CLEANERS—B1191

Made of White Ash Wood



Number.....	1	2	3	4	5	6	7	8
Length, First Section.....feet	6½	5½	4½	15	13	11	10	8
“ Second Section..... “	6½	5½	4½	6	6	6	5	5
“ Over All..... “	13	11	9	21	19	17	15	13
Price.....each	5.76	5.60	5.44	6.40	6.24	6.08	5.90	5.76
Number.....	9	10	11	12	13	14	15	.....
Length, 1st, 2d & 3d Sections, feet	7	6½	5½	5	4½	3¾	3	.....
“ Over All..... “	21	19	17	15	13	11	9	.....
Price.....each	8.40	8.24	8.08	7.92	7.76	7.60	7.44	.....

## BOILER BRUSHES



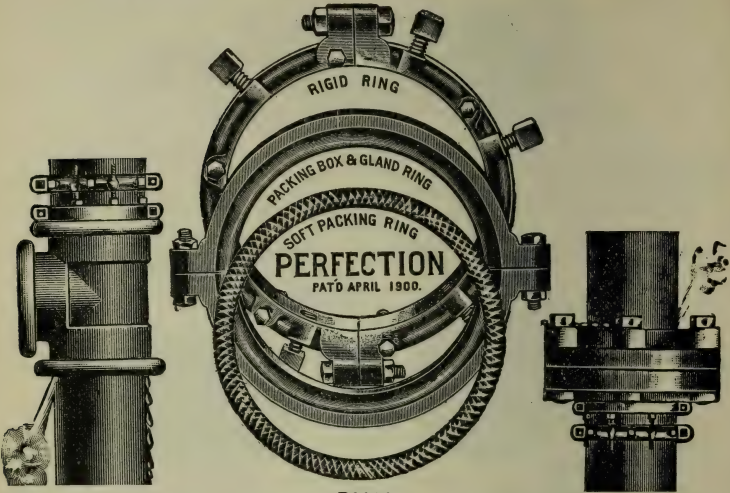
B1192



B1193

Prices on application.

PERFECTION LEAK CLOSING CLAMP



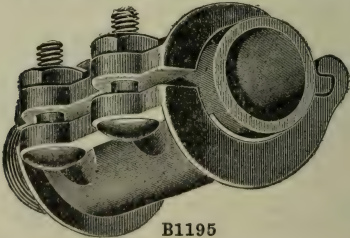
B1194

Guaranteed to stop all leaks on steam, air, gas, water, vacuum and ammonia piping which leak at threads or peaned joints next to any fitting.

Pipe size.....inches	2	2½	3	3½	4	4½	5	6	7	8
Each.....	2.35	2.85	3.00	3.35	3.90	4.35	4.50	5.50	6.50	7.50
Pipe size..... inches	9	10	12	14	15	16	18	20	22	24
Each.....	8.00	9.00	11.00	13.00	14.00	15.00	17.00	19.00	21.00	23.00

Larger sizes quoted on application.

EMERGENCY PIPE CLAMP



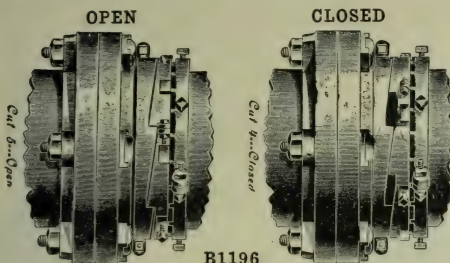
B1195

For stopping holes or splits in pipes.

Size.....inches	½	¾	1	1¼	1½	2	2½	3	3½	4
Length overall, inches	3¼	3¾	3½	3¾	4	4¾	4½	5	5½	6
Price.....each	.40	.45	.50	.60	.70	.80	1.00	1.25	1.50	2.00

½-inch to 2-inch inclusive, packed 12 in a box.  
2½-inch to 4-inch inclusive, packed 6 in a box.

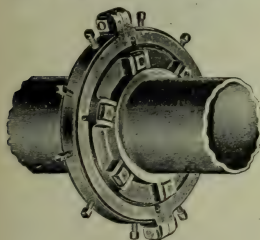
# KING BEE LEAK CLOSING CLAMP



B1196

Prices on application.

Clamp is closed by driving the loose ring around a fraction of a turn, by placing a block against the lug and driving it with a hammer. No large threads to turn.



## FLANGE CLAMP

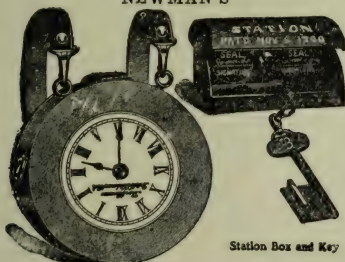
B1197

Prices on application. State diameter of Flange.

For closing leak between two flanges.

## PORTABLE WATCHMAN'S CLOCKS

NEWMAN'S



Station Box and Key

B1198

Price, Nine Station Clock, complete.....	each	50.00
" Sixteen Station Clock, complete.....	"	55.00
" Additional Stations.....	"	1.75

The case is made of aluminum for lightness and to prevent tarnishing or injury from acids or grease.

Nine key weighs about 24 ounces, and sixteen key about 32 ounces.

The Dial is arranged for twenty-four hours; this gives a record for Sunday registering when necessary.

The Keys are made of Delta metal which will neither rust nor corrode. The Seals cover the screws that fasten the box to the wall.





B1200

## STEEL OILERS

With Spring Bottom

State whether straight  
or bent spout is wanted.



B1201

Capacity, Pint	Diameter, Inches	Length Spout, Inches	COPPERIZED		POLISHED STEEL	
			Number	Per Dozen	Number	Per Dozen
1/4	2 1/4	2 1/2	12	4.50	8	4.50
1/3	3 1/8	3	13	5.50	9	5.50
1/3	3 3/8	5	13A	6.00	9A	6.00
1/3	3 3/8	9	14	6.50	10	6.50
1/2	3 3/4	3	14A	7.50	10A	7.50
1/2	3 3/4	5	14AA	8.00	10AA	8.00
1/2	3 3/4	9	14B	8.50	10B	8.50
1	4 1/4	3	15	9.25	11	9.25
1	4 1/4	5	15A	9.75	11A	9.75
1	4 1/4	9	16	10.50	11AA	10.50

Packed 1/2 dozen in box, smaller than 1 pint can be furnished one dozen in box.  
Solid Brass Oilers quoted on application.

## STEEL SPOUTS. Coppered Steel or Polished Steel, Straight or Bent

Size.....	inches	2 1/2	3	5	9
Price.....	per dozen	2.25	2.75	3.25	4.25



B1202

## "No. 600" SPRING BOTTOM STEEL OILER

Per dozen, \$5.00.  
Heavily copper plated inside and out.  
Size 1/2-pint, 3-inch diameter, 5-inch spout.  
Packed 1 dozen in a box.

PUMP OILERS

DRIP OILERS



B1207

ENGINEERS' OILERS



B1209

PUMP OILERS WITH DETACHABLE SPOUTS

Capacity, Pints	Diameter, Inches	Length of Spout, Inches	Copperized Steel		Tin	
			Number	Per Dozen	Number	Per Dozen
1/2	3	6	400	23.15	300	15.25
1	3	7	401	25.50	301	17.30
1	3	10	402	25.75	302	17.50
1 1/2	4	12	403	30.15	303	21.75
2	4	12	X404	32.50	X304	24.00
2	4	16	405	32.75	305	24.25

For **Solid Spout** (not detachable) **Pump Oilers**, from above list: 1/2 pint, deduct, Tin, \$5.45, Copperized, \$6.65; 1 pint, deduct, Tin, \$5.50, Copperized, \$7.00; 1 1/2 pint, deduct, Tin, \$6.20, Copperized, \$7.60; 2 pint, deduct, Tin, \$6.55, Copperized, \$8.00. **Brass Oilers** quoted on application.

Half pint and one pint packed 1 dozen in a box; larger sizes, 1/2 dozen in box.

SPOUTS (Nuts Extra)

Length.....inches	6	7	10	12	16
Copperized.....per doz.	1.25	1.35	1.75	2.10	2.25
Tin.....	1.10	1.20	1.35	1.70	1.90

The 6, 7, and 10-inch Spouts fit half and one pint Oilers; 12 and 16-inch fit larger sizes.

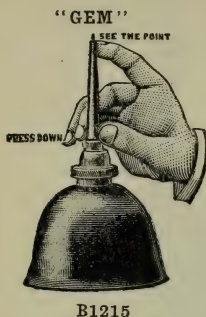
Extra parts for these Pump Oilers can be furnished when desired.

ENGINEERS' DRIP OILERS—B1209

Capacity, Pints	Diameter, Inches	Length Spout, Inches	Copper Plated		Tin	
			Number	Per Doz.	Number	Per Doz.
1	3	12	65	5.00	61	3.00
1 1/2	4	14	75	5.80	71	3.50
2	4	16	85	6.40	81	4.00

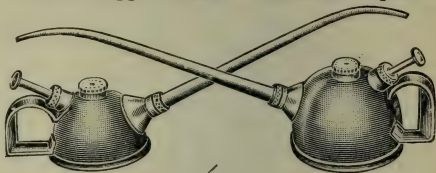
No. 61 packed 1 dozen in a box; larger sizes, 1/2 dozen in a box.

## GEM STEEL OILERS



B1215

Capacity .....	pints	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1
4-in. Straight Nozzle.....	per doz.	5.00	6.00	7.00	8.00
6 " " " " " " " "	or Curved Nozzle "	5.50	6.50	7.50	8.50
9 " " " " " " " "	" "	6.00	7.00	8.00	9.00

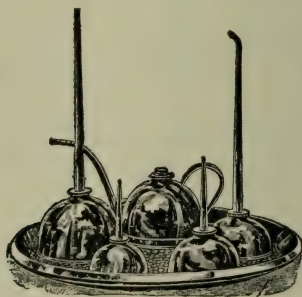
STEEL AUTOMOBILE PUMP OILER  
Duplex Copper Plated. Detachable Spout

B1216

Number .....	800	801	802	803	804
Capacity.....pints	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	1	1
Diameter.....inches	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{1}{4}$
Spout....."	3	5	9	5	9
Price.....per dozen	23.00	23.50	24.00	25.25	25.75

OILER

SETS



B1217

STEEL SETS	Oval Tray				Round Tray			
	Copper Plated		Nickel Plated		Copper Plated		Nickel Plated	
	No.	Price Set	No.	Price Set	No.	Price Set	No.	Price Set
Five Pieces, including Tray.....	35	7.00	55	8.00	X30	5.00	50	7.00
Six " " " " " " " ".....	45	10.00	65	11.00	X40	7.00	60	10.00
BRASS SETS—With Round Tray	Polished Brass				Nickel Plated			
	No.		Price Set		No.		Price Set	
	No.		Price Set		No.		Price Set	
Five Pieces, including Tray.....	030		6.00		050		8.00	
Six " " " " " " " ".....	040		9.00		060		11.00	

PERFECTION TIN FILLER



B1220

Per dozen:  
1 Qt., \$6.00. 2 Qt., \$9.60.

BRONZED STEEL OR  
BRASS FILLER



B1221

BRONZED STEEL  
TALLOW POT



B1222

	B1221				B1222	
	1 Pt.	1½ Pt.	1 Qt.	2 Qt.	1 Qt.	2 Qt.
Capacity.....	1 Pt.	1½ Pt.	1 Qt.	2 Qt.	1 Qt.	2 Qt.
Diameter.....inches	4½	4¾	5	6	5	6
Height....."	3½	4	5	6	5	6
Number.....	19	19A	210	211	212	213
Bronzed Steel.....per dozen	14.00	17.00	20.00	24.00	21.00	25.00
Number.....		190	200	201		
Brass.....per dozen		22.00	30.00	34.00		

PERFECTION VALVE OILER



B1223

TIN  
TALLOW POT



B1224

Capacity, ¼ Gal.  
Per dozen, \$24.00.

Number.....	25	27	29	31
Capacity.....	½ Pt.	1 Pt.	1 Qt.	2 Qt.
Tin.....per dozen	8.00	9.00	12.00	18.00
Brass....."	12.00	13.50	18.00	25.00
Nickel....."	14.50	17.00	22.50	30.00

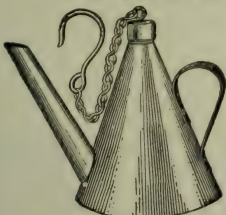
STEEL  
TORCH  
No. 26



B1226

\$12.00 per dozen; height, 15 inches; diameter, 2 inches.

PYRAMID TORCH



B1225

Brazed Steel. Price per dozen: ½ pt., \$7.00; 1 pt., \$9.00; 1 qt., \$10.00; 2 qt., \$12.00. (2 Burner add \$1.00 dozen.)  
4 qt. 2 burner, \$15.00.

Sheet Iron. Price per dozen; Single Burner, 1 qt., \$8.00; 2 qt., \$11.00. Double Burner, add \$2.40 dozen.

BANJO  
GASOLINE  
TORCH



B1227

\$24.00 per dozen.

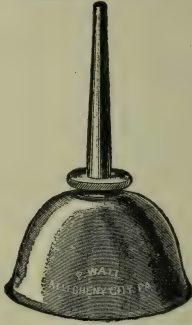


BROAD TOP OILER  
Nos. 20, 21, 22 and 23

PYRAMID OILER  
Nos. 30, 31 and 32

EXTRA QUALITY  
P. WALL  
BRAZED, STEEL OILERS,  
ETC.

Nos. 100 to 512



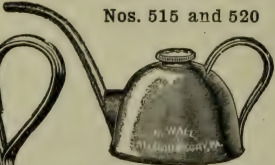
Nozzles 6 inches and longer bent, unless ordered straight.

Cap., Pint	Diam., In.	No.	Noz., In.	Per Doz.	No.	Noz., In.	Per Doz.	No.	Noz., In.	Per Doz.
1/6	2 3/4	100	2 1/2	4.00	104	4	4.50	....	....	....
1/4	3 3/8	204	4	5.00	206	6	5.50	209	9	6.00
1/2	3 3/4	304	4	6.00	306	6	6.50	309	9	7.00
3/4	4 1/8	404	4	7.00	406	6	7.50	409	9	8.00
1	4 3/8	504	4	8.00	506	6	8.50	509	9	9.00
1	4 3/8	512	12	12.00	....	....	....	....	....	....

The following are sent with straight spouts, unless ordered bent:

No.	Capacity	Nozzle, Inches	Per Dozen	No.	Capacity	Nozzle, Inches	Per Dozen
20	1 pt.	8	12.00	30	1 pt.	8	9.00
21	1 1/2 "	10	12.00	31	2 "	10	10.00
22	2 "	12	13.00	32	2 qt.	12	12.00
23	2 qt.	12	15.00	....	....	....	....

Nos. 515 and 520



ENGINEER'S FILLER

TALLOW POT - Nos. 40 and 41

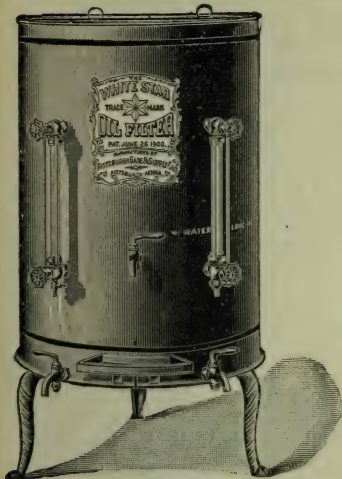
Number.....	515	520	40	41
Capacity.....	1 pt.	2 qt.	1/2 gal.	1 gal.
Diameter.....inches	4 1/2	6 1/2	....	....
Height....."	3 1/2	6 1/2	....	....
Price.....per dozen	12 00	18.00	15.00	18.00

ENGINEER'S  
TORCH

Per dozen, \$9.00.

## THE WHITE STAR OIL FILTER—ROUND TYPE

Saves 50 to 75 per cent in Oil Bills.



B1228

The cost of a White Star Oil Filter is so small in comparison to the savings effected by its use that the original investment is repaid within a few weeks, and thenceforth the oil economy continues as a large net saving in operative expense in any power plant.

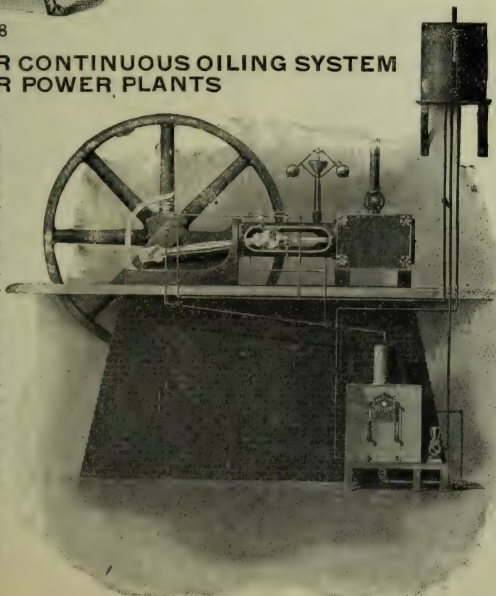
Number	Filtering Capacity Gallons Daily	CAP. GALS.			DIMENS.		List
		Pure Oil	Dirty Oil	Water	Diam. In.	Total Hight. In.	
2	20	12	4	4	16	34	35.00
4	35	20	5	5	18	37	50.00
5	40	24	7	7	20	38	55.00
7	60	32	9	9	22	40	75.00
10	80	44	11	11	24	44	85.00
12	100	55	15	15	26	47	100.00
15	125	80	17	17	29	50	125.00

The filtering capacity of the White Star, under normal working conditions, always equals that given in the table, and is secured without pouring in dirty oil and drawing off the purified oil almost constantly, which is positively necessary in filters with smaller storage capacity.

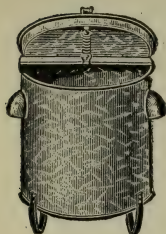
## THE WHITE STAR CONTINUOUS OILING SYSTEM FOR POWER PLANTS

Is a mechanical system for handling the oil, feeding it to all the bearings, catching and filtering the drips and returning the purified oil to a reservoir for feeding again to the bearings. Thus the system is automatic and continuous in operation. The only handling of oil is when it is pumped from the barrel in which it is received to the overhead reservoir from which it is fed by gravity to the bearings, and to which it is returned from the filter.

Further information will be supplied upon application. In writing for estimates, state horse-power, number and type of engines, also the number of gallons of oil used per day.



B1229



### GALVANIZED SELF-CLOSING OILY WASTE CAN

B1230

Number.....	1	2	3	4	5	6	7	8
Size.....inches	11¼ x 15	12 x 18	13 x 20	14 x 22	16 x 24	18 x 26	20 x 20	24 x 36
Price...per dozen	16.00	22.00	28.00	34.00	40.00	78.00	96.00	126.00

### GALVANIZED ROUND BOTTOM FIRE BUCKET

B1232

10, 12, or 14 Quart.

Prices on application.



### THE STANDARD FIRE EXTINGUISHER

B1235

Is constructed to stand high pressure.

Weight empty, 17 pounds. Charged, 38½ pounds.

The "Automatic Regulated Feed" in the Standard Fire Extinguisher thoroughly mixes the chemicals—insures perfect chemical action—regulates the discharge.

**Note.**—The Standard is finished in red enamel, polished copper, or nickel plate. The enameled Extinguisher is tinned outside as well as the interior, which makes it more durable and easier kept in good condition than when otherwise finished, especially in buildings and factories where dampness or gases are sure to corrode copper. The enamel, unless the copper is previously coated, will soon be undermined by corrosive action.

Always furnished in red enamel unless otherwise specified.

A charge, with printed directions, included with each Extinguisher.

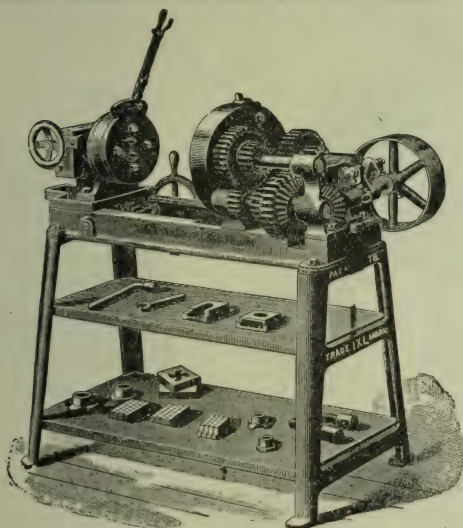
Price, each, \$20.00.



# SAUNDERS PIPE MACHINES

## IXL POWER AND HAND MACHINE

With Adjustable Expanding Die Head With Interchangeable Chasers



B1300

IXL Power and Hand Machine with <b>Adjustable Dies</b> as illustrated with Crank Wheel, Pulley, Countershaft, Nipple Sockets and attachment for solid dies; has oil reservoir over die head; Cuts and Threads $\frac{1}{4}$ in. to 2 in. pipe. Concentric gripping chuck.....	190.00
Hand Machine, same as above except less countershaft.....	165.00
IXL Power and Hand Machine with <b>Solid Dies</b> instead of adjustable.....	110.00
Hand Machine, with <b>Solid Dies</b> , same as Power and Hand, less Countershaft.....	90.00
The IXL Machine has three changes of speed.	

No. 1 Power and Hand Machine, with Countershaft, Universal Gripping Chuck, and Adjustable Die Head, $\frac{1}{4}$ to 2 in. and cut off tool, and Nipple Sockets.....	205.00
No. 1 Hand Machine, same as above except less Countershaft.....	170.00
No. 1 with Solid Dies, instead of Adjustable Hand \$120.00, Hand & Power.....	155.00
No. 1 Machines have Oil Reservoir over die head.	

The following machines have oil pump;

No. 0 Power Machine, Five Die Heads, $\frac{1}{8}$ to $\frac{3}{4}$ in., Lever Grip Chuck.....	375.00
No. 2 " " Adjustable Die Head, $\frac{1}{4}$ to 2 in., Universal Chuck....	350.00
No. 2A " " with 8 Die Heads, $\frac{1}{4}$ to 2 in. and Lever Grip Chuck.....	600 00
No. 2A " " w. 1 Adjust. " Head w. interchangeable Chaser, Lever Grip.....	475.00
No. 3 " " 2 Heads w. $\frac{1}{4}$ to 3 in. Adjust. Chasers, Universal Chuck.....	500.00
No. 3F " " 2 " " $\frac{1}{2}$ " 3 " " " Lever Grip.....	670.00
No. 4 " " 2 " " 1 " 4 " " " Universal Chuck.....	575.00
No. 4C " " 2 " " 1 " 4 " " " Lever Grip.....	725.00
No. 5 " " 2 " " 1 " 6 " " " Independent or Universal Grip..	975.00
No. 6 " " 1 " " 2 " 8 " " " Independent or Universal Grip..	1075.00

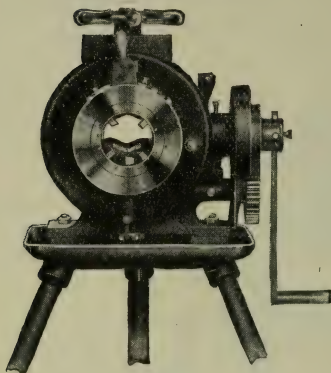
Larger sizes quoted on application.

Can furnish separate die head for each size pipe for any of above machines at special price.



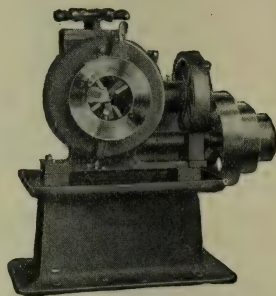
## OSTER PIPE MACHINES

HAND MACHINE



B1301

POWER MACHINE



B1302

Sizes Right Hand	Sets of Dies	Tripod Included Hand Machine	Base Included Power Machine
$\frac{1}{4}$ in. to 2 in.	4	No. 201.... 70.00	No. 201A....*110.00
1 " " 4 "	4	" 204....150.00	" 204A.... 260.00
1 " " 6 "	6	" 206....250.00	" 207A.... 425.00

No. 207A Machine with direct connected Electric Motor.....575.00

\*No. 201A is mounted on Tripod, same as No. 201.

Nos. 204A and 207A have cast base.

If without Tripod deduct from Nos. 201, 201A, and 204 \$10.00, from No. 206 \$25.00.

A Pipe rest included with each machine.

A Countershaft is included with power machines.

Nos. 204 and 206, also 204A and 207A have **Automatic Cut Off** attachment.

Dies thread two sizes without change.

The 4-inch and 6-inch hand machines have two speeds on one shaft, the change is made quick without removing crank or any part of machine.

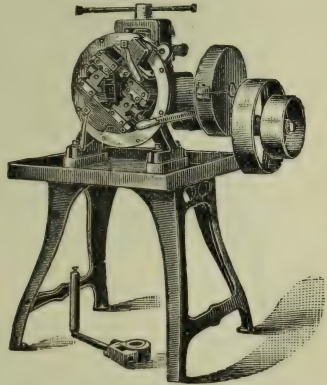
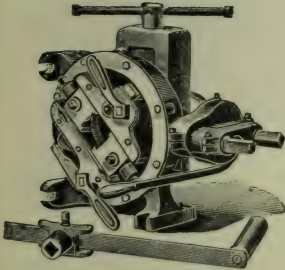
The Die Head has a quick opening and setting device; dies are set and released by one movement of the lever. The Adjustable Guides hold the pipe firmly while cutting off. No change off equipment necessary.

Pump works while threading left as well as right-hand threads.

Crank attachment for operating machine by hand is included in the equipment of power machines.

Vise is simple and practical. It centers the pipe perfectly, insuring straight threads.

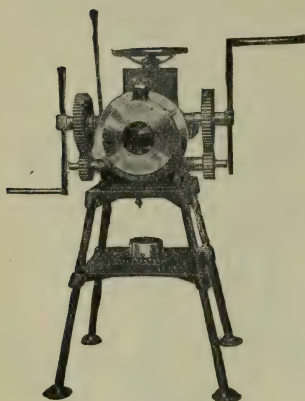
## With Quick Opening Dies



Speed of Countershaft, 300 revolutions. Weight of Hand Machine with Dies, boxed, 475 lbs. Power Machine, 580 lbs. Weight of Stand, 198 lbs. Weight of Power Attachment, 120 lbs. Weight of Countershaft, 206 lbs.

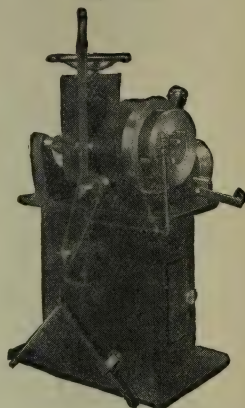
## THE LOEW VICTOR PIPE MACHINES

No. 02



B1305

No. 4



B1305½

Nos. 1, 2, 02, 3 and 03 have stand, oil pan, and tool benches as illustrated.

No. 1	Threads	¼ to 2 inches,	Hand (Geared on one side only)	80.00
No. 2	"	1 to 4	"	145.00
No. 02	"	1 to 4	" (with cut off attachment)	175.00
No. 3	"	1½ to 6	"	250.00
No. 03	"	1½ to 6	" (with cut off attachment)	280.00
No. 4	"	1 to 4	" & Power	290.00
No. 5	"	1½ to 6	" & "	450.00
No. 6	"	1 to 4	Belt driven	610.00
No. 06	"	1 to 4	With direct connected electric motor.....	810.00

**Extra Dies** per set (each set cuts two sizes), No. 1, \$3.00, No. 2 and 02, \$4.00.

Nos. 3 and 5, \$5.00; Nos. 4, 6 and 06, \$4.00.

**Extra Cut Off Blades** all sizes, each \$1.50.

Nos. 4 and 5 have solid cast-iron base in which is a compartment for tools, etc.

Nos. 6 and 06 have combination solid cast base and lathe bed.

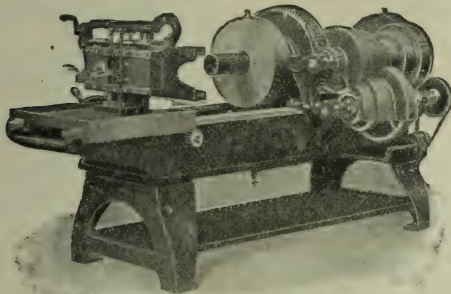
No. 1 has two speeds, No. 2, 02, 3 and 03 have three speeds. No. 4, 5 and 6 are furnished with countershaft, step pulleys, oil pump and cut off attachment.

No. 6 has cut off attachment and oil pump.

**Complete descriptive catalogue** furnished on application.

## BORDEN PIPE THREADING MACHINES FOR POWER

Type E. 1 to 4 inch with Universal Clutches

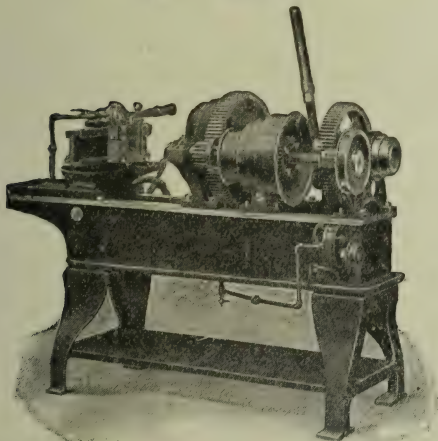


B1306

Type E. 1 to 4 inch complete, including one set of R. H. Dies, Two Universal Clutches (one on each end of spindle), Rotary Oil Pump, Cutting Off Attachment, and Countershaft. Weight 3,000 lbs., \$640.00.

Type E. Same as above except has Quick Gripping Chuck on front of machine and Universal Chuck on back end of machine. Weight 3,200 lbs., \$775.00.

Type A. Rear Side



B1307

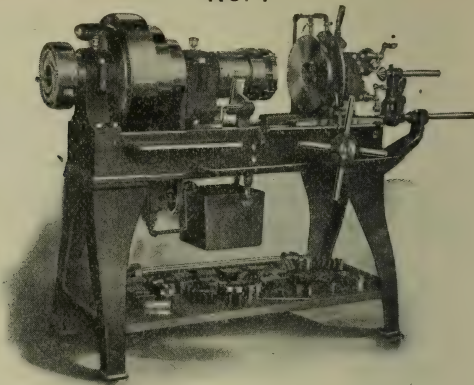
Type A. Thread  $\frac{1}{2}$  to 2 inch, complete including 1 set of R. H. Dies, Quick Gripping Chuck, Rotary Oil Pump, Cutting Off Attachment, and Countershaft. Weight complete 1,500 lbs., \$450.00.

Type A. With Universal Chuck, see B, \$350.00.



# THE MERRILL. APEX POWER PIPE MACHINE

## No. 1



### B1308

Prices include Countershaft and Automatic Oil Pump and Cutting Off Tool.

No. 1 Apex Machine with 8 set Chasers $\frac{1}{4}$ inch to 2 inches, and Reamer	350.00
Nipple Attachment .....	add 100.00
Chasers (5 pieces) .....	per set 8.00
Extra Threaded Grippers .....	" 18.00
Extra Pipe Grippers .....	" 10.00
Weight .....	pounds 2000
Speed Countershaft .....	revolutions 275

No. 2 Apex Machine with 8 set Chasers 1 inch to 4 inches* .....	550.00
Nipple Attachment .....	add 150.00
Chasers (5 pieces) .....	per set 10.00
Extra Grippers, for Pipe .....	" 10.00
Threaded Grippers .....	" 18.00
Weight .....	pounds 3200
Speed Countershaft .....	revolutions 200

No. 3 Apex Machine with chasers 1 inch to 6 inches* .....	900.00
Nipple Attachment .....	add 250.00
Chasers .....	per set 16.00
Extra Grippers, for Pipe .....	" 14.00
Threaded Grippers .....	" 25.00
Weight .....	pounds 4700
Speed Countershaft .....	revolutions 200

\*Reamer Attachment is extra. for No. 2 Machine, \$30.00; No. 3 Machine, \$40.00.

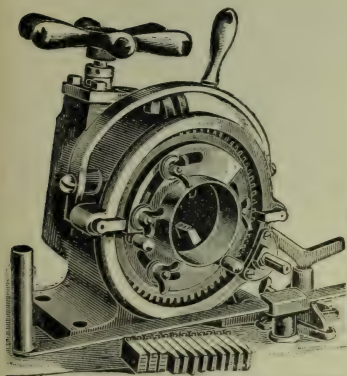
## MERRILL PORTABLE HAND PIPE MACHINE

In outline similar to cut B1301, less tripod and pan.

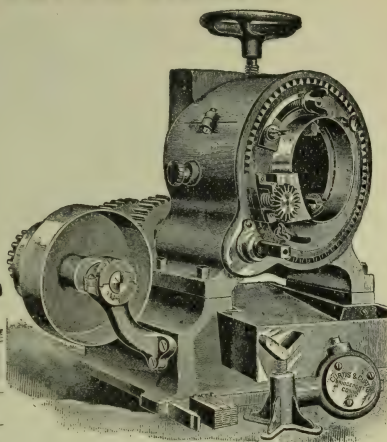
No. 5 with 2 set Chasers 1 inch to 4 inches (weight 275 lbs.) .....	100.00
No. 6 " 3 " " 1 " to 6 " ( " 390 lbs.) .....	190.00
No. 9 " 3 " " $2\frac{1}{2}$ " to 8 " ( " 740 lbs.) .....	350.00
No. 11 " 3 " " 4 " to 12 " ( " 1500 lbs.) .....	900.00

These Hand Machines are operated either by crank or ratchet lever. They have quick closing and operating die head, and improved cutting off knife.

## FORBES' PATENT DIE STOCK



B1309



B1310

## HAND MACHINES

## HAND OR POWER MACHINES

Number	RANGE	Net Weight	Net Price	Number	RANGE	Net Weight	Net Price
*30	¼ to 2 in., R. and L...	138	50.00	*70	¼ to 2 in., R. and L...	320	100.00
*32	¼ to 2 in., for Solid Dies (without dies)	145	45.00	*72	¼ to 2 in., for Solid Dies (without dies)	332	95.00
*34	1 to 5 in., R. H., 1 to 2 in., L. H.....	175	75.00	*74	1 to 3 in., R. H., 1 to 2 in., L. H.....	400	125.00
*36	¾ to 3 in., R. H., ¾ to 2 in., L. H.....	178	85.00	*76	¾ to 3 in., R. H., ¾ to 2 in., L. H.....	390	135.00
*37	¾ to 3 in., R. and L.	180	105.00	*77	¾ to 3 in., R. and L.	390	155.00
*38	1½ to 4 in., R. H....	288	100.00	*78	2½ to 4 in., R. H....	550	140.00
*42	1 to 4 in., R. H....	247	110.00	*80	1½ to 4 in., R. H....	544	150.00
*46	2½ to 4 in., R. H....	237	85.00	*84	1 to 4 in., R. H....	560	160.00
*50	4 to 6 in., R. H....	330	115.00	*88	4 to 6 in., R. H....	840	170.00
*52	3½ to 6 in., R. H....	335	130.00	*90	3½ to 6 in., R. H....	888	180.00
*54	2½ to 5 in., R. H....	338	150.00	*92	2½ to 5 in., R. H....	870	200.00
*56	2½ to 6 in., R. H....	344	175.00	*94	2½ to 6 in., R. H....	700	225.00
*58	1 to 6 in., R. H....	364	190.00	*96	1 to 6 in., R. H....	790	250.00
*64	2½ to 8 in., R. H....	648	325.00	†100	2½ to 8 in., R. H....	1500	500.00
*65	1 to 8 in., R. H....	646	360.00	†102	2½ to 10 in., R. H....	1900	700.00
*66	2½ to 10 in., R. H....	964	500.00	*104	2½ to 10 in., R. H....	2000	700.00
*67	2½ to 10 in., R. H....	970	500.00	†107	2½ to 12 in., R. H....	3600	900.00
*69	2½ to 12 in., R. H....	2000	650.00				

Left Hand Dies of any size can be furnished, if desired.

Side Crank Attachment for No. 36 and smaller, \$15.00. For Nos. 38 to 60 Machine, \$20.00. For Nos. 62 to 68 Machine, \$25.00.

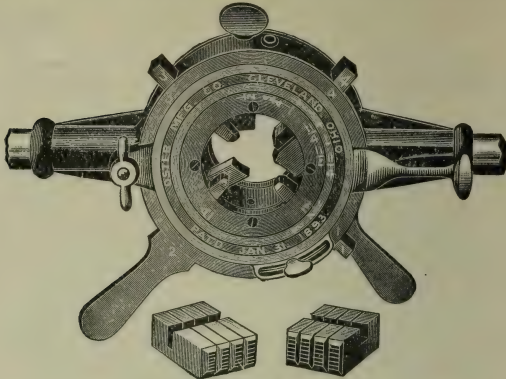
Nos. 30 to 37 and 70 to 77 has no Cut Off Attachment unless specially ordered.

\*Pressure feed machine. †Lead screw machine.

Prices Power Machines include countershaft, ratchet wrench and pipe rest.

A ratchet wrench is furnished with No. 38 and larger machines.

OSTER ADJUSTABLE DIE STOCKS



B1312

PRICE LIST WITH RIGHT HAND DIES

No. of Stock	SIZE OF PIPE EACH STOCK WILL THREAD AND CUT				Without Cut-off	With Cut-off	Net Weight Pounds
	One Set Dies	One Set Dies	One Set Dies	One Set Dies			
0	1/8	1/4 & 3/8	1/2	.....	12.00	15 00	5
1	1/8	1/4 & 3/8	1/2 & 3/4	.....	13.00	16.00	8
1 1/2 A	....	1/4 & 3/8	1/2 & 3/4	1	14.00	17.00	8 1/2
2	....	1/4 & 3/8	1/2 & 3/4	1 & 1 1/4	17.00	20.00	15
3	....	.....	1 & 1 1/4	1 1/2 & 2	22.00	25.00	22
4	....	1/2 & 3/4	1 & 1 1/4	1 1/2 & 2	25.00	28.00	22 1/2
4 1/2	3/8	1/2 & 3/4	1 & 1 1/4	1 1/2 & 2	28.00	31.00	25
3 A	....	.....	.....	1 to 2	20.00	.....	20
*5	....	.....	1 1/2 & 2	2 1/2 & 3	40.00	45.00	57
*6	....	.....	2 1/2 & 3	3 1/2 & 4	55.00	60.00	60
Ratchet Stocks	7	.....	1 & 1 1/4	1 1/2 & 2	25.00	28.00	27
	7 1/2	.....	1 & 1 1/4	1 1/2 & 2	28.50	31.50	30
	7 A	.....	.....	1 to 2	22.00	.....	26
	8	.....	2 1/2 & 3	3 1/2 & 4	60.00	65.00	64
	10	.....	3 1/2 & 4	4 1/2 & 5	75.00	90.00	100
	17	2 1/2 & 3	3 1/2 & 4	4 1/2 & 5	150.00	.....	160

No. 3 can be fitted with 1/2 and 3/4 Dies at net extra price \$3.00.

\*Nos. 5 and 6 have four handles.

No. 17 (not illustrated) is a Geared Die Stock. Can furnish with a Bench Bracket \$5.00 extra or Bench Bracket and Pan \$10.00 extra, or can furnish complete with Bracket, Pan and Tripod Stand, complete, \$170.00.

DIES RIGHT HAND OR LEFT HAND

Each set threads two sizes of pipe, except 1/8 inch and 6 inch dies. Dies for 3A and 7A thread four sizes to the set.

Net Prices, per each set: No. 0, \$1.25; Nos. 1 and 1 1/2 A, \$1.50; No. 2, \$1.75; No. 3 and No. 4, \$2.00; No. 3A and No. 7A, \$2.00; No. 7 and No. 7 1/2, \$2.50; No. 4 1/2, \$2.50; No. 5, \$3.00; No. 6 and No. 8, \$3.50; No. 10, \$4.50; No. 17, \$5.00.

Cut-off Blade, net, each: Nos. 0 to 4, 30c; Nos. 4 1/2 to 6, 40c; Nos. 7 and 7 1/2, 75c; No. 8, 85c; No. 10, \$1 15.

For Machinists and Bolt Die Stocks, see B1343.

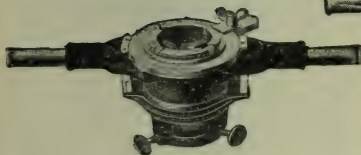
# “BEAVER” EASY WORKER DIE STOCKS

Thread All Sizes without Changing Dies

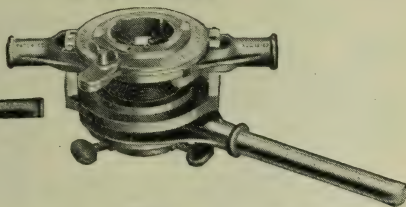
One Man Cuts Any Size

No. 20

No. 22 RATCHET



B1313



B1314

No. 20

No. 22

Threads, 1, 1¼, 1½ and 2 in.,  
R. H..... 30.00  
Extra Dies, per set..... 3.50

Net weight 18 pounds.

One set of Beaver Dies cut  
four sizes, 1, 1¼, 1½ and 2 inches.

The Beaver Dies have fewer teeth, and recede while threading to form the tapered thread. They can be set to thread either over or under standard, if desired.

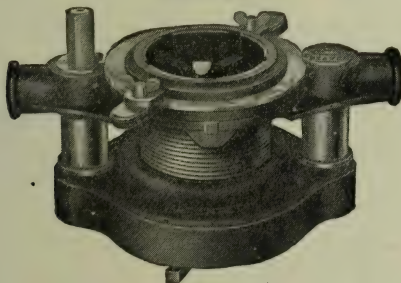
With a positive cam the one set of dies are set in or out in two seconds to cut any of the sizes of pipe. Each die is a separate tool and easily sharpened. Dies cannot strip threads.

Threads, 1 to 2 in., Right  
Hand..... 35.00  
Extra Dies, per set..... 3.50

Net weight 21 pounds.

Two handles are furnished so  
it may be used as a regular stock.

No. 40



B1315

Threads 2½, 3, 3½ and 4 inch, R. H..... 110.00  
Extra Dies, per set..... 9.00

This stock is geared so one man easily threads 4-inch pipe Net weight 75 pounds.

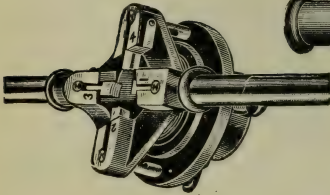


TOLEDO ADJUSTABLE DIE STOCKS

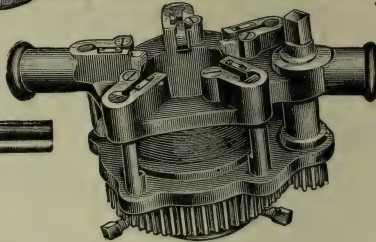
No. 2



No. 1



B1316



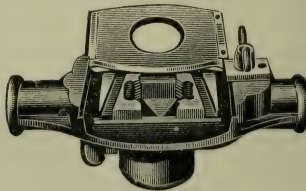
PIPE SIZES B1317

No. 1	with 4 set Dies, Cutting 1 to 2 inches.....	24.00
No. 1A	“ 4 “ “ “ 1 to 2 “ (Ratchet)....	30.00
No. 2	“ 4 “ “ “ 2½ to 4 “ .....	100.00
No. 3	“ 5 “ “ “ 4½ to 8 “ .....	300.00

No. 3 is similar in design to No. 2, except has no handles, but is operated entirely by the ratchet.

No .....	1	2	3
Extra Dies, Each Size.....	2.50	8.00	12.00
“ “ Full Set.....	10.00	32.00	60.00

THE “LOEW” ADJUSTABLE STOCK AND PIPE DIES  
SHOWING EASY SLIDING MOTION  
OF CAM-PLATE



B1318

No.	Style	Threads Inches	Price Each	No.	Style	Threads Inches	Price Each
0	R. H.	1/8 to 1/2	9.50	2	R. or L.	1 1/4 to 2	22.50
1	R. H.	1/4 “ 1	13.25	2	R. or L.	1 “ 2	25.00
1	R. H.	1/8 “ 1	15.00	2	R. or L.	3/4 “ 2	28.00
1 1/2	R. or L.	1/2 “ 1 1/4	17.00	3	R. or L.	1 1/2 “ 3	65.00

Ratchet Stocks. No. 1 (1/4 to 1 in.), \$23.00. No. 2 (1 1/4 to 2 in.), \$40.00. No. 3 (2 1/2 to 3 in.), \$70.00.

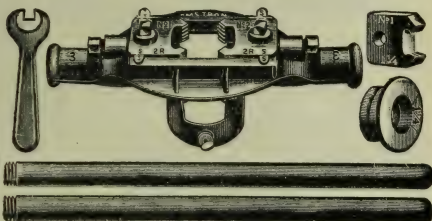
Extra Dies. Each Pipe Size No. 0, \$2.00. No. 1, \$2.50. No. 1 1/2, \$3.50. No. 2, \$4.50. No. 3, \$8.50.

Extra Bushings. Each Pipe Size Nos. 0 and 1, 25c. No. 1 1/2, 40c. Nos. 2 and 3, 50c.

# ARMSTRONG'S ADJUSTABLE PIPE STOCKS AND DIES

No. 2

No. 3



**B1320**

Plates Nos. 1 and 2 are packed in neat hardwood case.

Number	Dies	Threads Pipe Inch	Price Complete	Stock Only	Dies Per Set Right or Left	Bushings
1	4 Set	$\frac{1}{8}$ to $\frac{1}{2}$	9.00	3.25	(2 pieces) 1.25	20
2	5 "	$\frac{1}{4}$ " 1	12.00	4.00	" 1.50	25
2½	7 "	$\frac{1}{2}$ " 1½	12.00	4.50	" 3.25	40
*3	*4 "	*1 " 2	*24.00	7.00	" 4.00	50
6	+1 "	2½ " 3	40.00	25.00	" 15.00	100
7	+2 "	2½ " 4	60.00	30.00	(4 pieces) 16.00	150

Nos. 6 and 7 have 4 handles.

\* **No. 3, with 3 Set of Dies** only, \$20.00. Can furnish  $\frac{3}{4}$  Dies for No. 3 Stock.

+ Nos. 2½, 6, and 7 Dies are double end, cutting two sizes.

† Single end,  $\frac{3}{8}$  inch or  $\frac{1}{4}$  inch, No. 2½ Dies, \$2.50 each size.

**Extra Screws**, each: Collar, Thumb, or Adjusting. Nos. 1 and 2, 12c; Nos. 2½ and 3, 15c.

**Brass Pipe Sets**, No. 2 (5 Set). O. D.  $\frac{3}{8}$  and  $\frac{1}{2}$  inch, 20, and  $\frac{7}{8}$ , 1, and 1½ inches, 18 thread. R. H., \$15.00; with Taps, \$26.25.

## RATCHET ATTACHMENT For Armstrong Stocks



**B1321**

Price, Ratchet Attachment only.  
Stock not included.

### Fitting Stock Nos. and Price

No. ....	2	2½	3	6	7
Each.....	2.50	3.00	3.50	5.00	5.00

For Bolt Stock and Dies

see B1342.

## BARD ADJUSTABLE BUSHING For Armstrong Stocks



**B1322**

Price, Adjustable Bushing only.  
Stock not included.

### Fitting Stock Nos. and Price.

Number.....	1	2	2½	3
Each.....	4.50	5.00	6.00	8.00

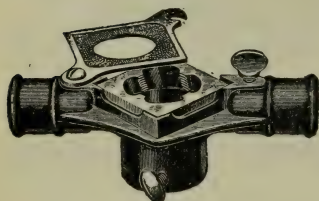
If furnished from factory on stocks instead of bushings, add to Stock No. 1, \$3.00; No. 2, \$3.50; No. 2½, \$4.20; No. 3, \$5.70.

# MALLEABLE SCREW PLATES

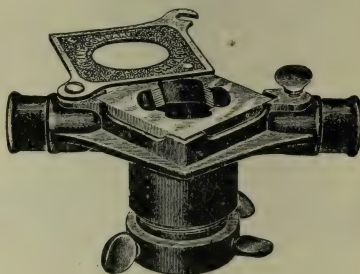
With Solid Dies

Nos. 1, 1 $\frac{1}{4}$ , AND 1 $\frac{1}{2}$   
Are Without Leader Screw

Nos. 2 AND 3



B1323



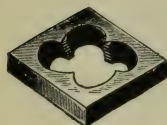
B1324



DIE

BUSHINGS

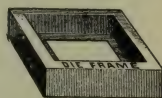
FRAME



B1325



B1326



B1327

Plate Number.....	1	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	3
Dies with each Plate.....	$\frac{1}{4}$ to 1	$\frac{3}{4}$ to 1 $\frac{1}{4}$	1 to 1 $\frac{1}{2}$	1 $\frac{1}{4}$ to 2	2 $\frac{1}{2}$ and 3
Dimensions of Dies.....	2 $\frac{1}{2}$ x $\frac{3}{4}$	$\frac{3}{4}$ x $\frac{3}{4}$	3 x $\frac{3}{4}$	4 x $\frac{7}{8}$	5 x 1 $\frac{1}{4}$
Plate, with Dies Complete, ea.	15.00	13.50	13.50	20.00	43.00
“ without Dies..... “	5.00	6.00	6.00	9.50	25.00
Dies, Right or Left..... “	2.00	2.50	2.50	3.50	9.00
Guides..... “	.35	.45	.45	.60	1.00

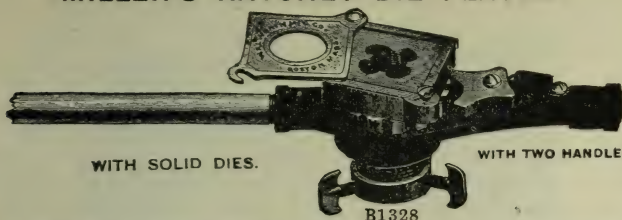
By using a frame, smaller dies can be used in large plates.

The F Plate can be furnished with four handles; add to list \$8.00.

## NET PRICE OF PARTS, EACH

	Caps	Thumb Screws	Leader Screws Only	Screws for Leader	Handles Pair	Die Frame
No. 1 Plate.....	.20	.10	.....	.....	.70	.....
“ 1 $\frac{1}{4}$ or 1 $\frac{1}{2}$ Plate.....	.30	.10	.....	.....	.80	.20
“ 2 Plate.....	.30	.10	1.50	.10	1.00	.30
“ 3 “.....	.....	.....	5.50	.....	.....	.50

# MILLER'S RATCHET DIE PLATES



WITH SOLID DIES.

WITH TWO HANDLES.

B1328

Nos. C, D, and E with Leader Screw. Nos. A and B are without Leader Screw

Number..	A	B	C	D	E
Dies Furnished with each Stock.....	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{1}{4}$ to 1	1 to $1\frac{1}{2}$	$1\frac{1}{4}$ to 2	$2\frac{1}{2}$ to 3
Dimensions of Dies, Solid.....	$2 \times \frac{1}{2}$	$2\frac{1}{2} \times \frac{3}{4}$	$3 \times \frac{3}{4}$	$4 \times \frac{7}{8}$	$5 \times 1\frac{1}{4}$
Stock with R. H. Dies Complete.....	13.00	15.00	18.50	20.00	43.00
“ without Dies.....	7.50	7.50	13.00	13.50	29.00
Extra Dies, R. or L. Hand..... each	1.10	1.50	1.80	2.50	7.00
Guides.....	.20	.25	.35	.45	.75
Die Frames.....	.22	.30	.38	.45	.5
Space Required Around Pipe to Cut and Thread...inches	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5

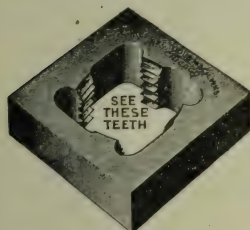
## SAUNDERS' COMBINATION DIE STOCKS

With Loose Dies



B1329

No. 0:  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$ , and  $\frac{1}{2}$  inch, \$8.00. No. 00:  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and 1 inch, \$9.00.  
Extra Dies, Right or Left, each: No. 0, \$1.00; No. 00, \$1.50.



B1330

NYE  
DIES

Pipe Sizes



B1331

## NYE SOLID DIES

## NYE DIES—For Armstrong Stocks

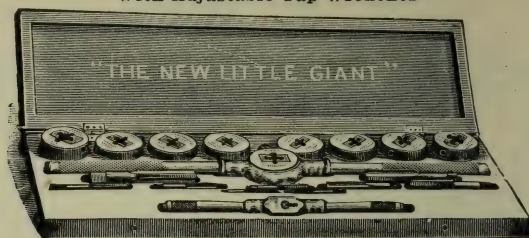
Block 4x4x $\frac{3}{4}$ Price Each	Block 3x3x $\frac{3}{4}$ Price Each	Block 2 $\frac{1}{2}$ x2 $\frac{1}{2}$ x $\frac{3}{4}$ Price Each	$\frac{1}{4}$ in. to 1 $\frac{1}{2}$ " " 1 $\frac{1}{4}$ " " 2 $\frac{1}{2}$ " " 3 " "	in. for No. 2 " " " " " " " " " "	Stock, ea.	
2 inch, 5.00	1 $\frac{1}{2}$ inch, 4.50	1 inch, 4.00			4.50	
1 $\frac{1}{2}$ " 5.00	1 $\frac{1}{4}$ " 4.00	$\frac{3}{4}$ " 3.00			5.40	
1 $\frac{1}{4}$ " 4.50	1 " 4.00	$\frac{1}{2}$ " 3.00				
1 " 4.50	$\frac{3}{4}$ " 3.50	$\frac{3}{8}$ " 2.50				
$\frac{3}{4}$ " 4.00	$\frac{1}{2}$ " 3.50	$\frac{1}{4}$ " 2.50				
$\frac{1}{2}$ " 4.00	$\frac{3}{8}$ " 3.00	$\frac{1}{8}$ " 2.00				
	$\frac{1}{4}$ " 3.00					

One man and a Nye Die will do as much work as two men can do with another kind—and with less expenditure of strength.



## LITTLE GIANT SCREW PLATES FOR BOLTS

With Adjustable Tap Wrenches



B1335

Number of Screw Plate	Length of Stock Inches	Diameter of Collet Inches	Size Dies and Taps in Each Set with V Form Threads	Price Each
1	14½	2	1¼, 5/16, 3/8, 7/16, 1/2	12.00
2	23	2¾	1¼, 5/8, 1/2, 3/4, 1	13.50
3	26	2¾	1/2, 5/8, 3/4, 1	15.00
4	26	2¾	1/2, 5/8, 3/4, 1	17.50
5	23	2¾	1¼, 5/8, 3/4, 1/2, 5/8, 3/4	16.00
6	26	2¾	1¼, 5/8, 3/4, 1/2, 5/8, 3/4, 1	22.00
7	26	2¾	1¼, 5/8, 3/4, 1/2, 5/8, 3/4, 1	25.50
8	14½	2	1¼, 5/8, 3/4, 1/2	18.00
9	26	2¾	1¼, 5/8, 3/4, 1/2	27.50
20	40	4	1¼, 5/8, 3/4, 1/2, 5/8, 3/4, 1	35.00
25	52	4½	1¼, 5/8, 3/4, 1/2, 5/8, 3/4, 1	45.00
30	52	4½	1¼, 5/8, 3/4, 1/2, 5/8, 3/4, 1	37.50
40	23	2¾	1¼, 5/8, 3/4, 1/2, 5/8, 3/4, 1	40.00
50	26	2¾	1¼, 5/8, 3/4, 1/2, 5/8, 3/4, 1	60.00

## MACHINISTS' SETS "LITTLE GIANT" SCREW PLATES

With Taper, Plug and Bottoming Taps, and Adjustable Tap Wrenches

Put up in neat case just as illustrated B1335, except has *full sets* of taps, taper, plug and bottoming, for each size. For number of threads to the inch, see B1335.

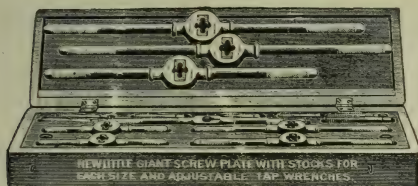
No. 101.	Cutting	1¼, 5/16, 3/8, 7/16, 1/2 inch	15.50
" 102.	"	1¼, 5/8, 1/2, 3/4, 1 inch	18.00
" 103.	"	5/8, 3/4, 1, 1½ inch	22.00
" 104.	"	1/2, 5/8, 3/4, 1 inch	25.00
" 105.	"	1¼, 5/8, 3/4, 1 inch	22.00
" 106.	"	3/8, 1/2, 5/8, 3/4, 1 inch	31.25
" *107.	"	1¼, 5/8, 3/4, 1 inch	36.00
" 108.	"	1¼, 5/8, 3/4, 1 inch	24.00
" *109.	"	1¼, 5/8, 3/4, 1 inch	38.00
" *140.	"	1¼, 5/8, 3/4, 1, 1½, 1¾ inch	55.00
" *150.	"	1¼, 5/8, 3/4, 1, 1½, 1¾, 1½ inch	84.00

\*Have two Adjustable Tap Wrenches. Last four have two stocks each.

Unless otherwise ordered, V form of thread, exact sizes, will be sent. U. S. S. or Whitworth forms of thread furnished at same prices, if desired; also rough iron sizes, when ordered

# FULL STOCKED SCREW PLATES

A Stock for Each Size



B1337

Each assortment is put up in a neat wood case.

Number of Screw Plate	Size Dies and Taps in Each Set	Price Each
61	Cuts $\frac{1}{4}$ 20, $\frac{5}{16}$ 18, $\frac{3}{8}$ 16, $\frac{7}{16}$ 14, $\frac{1}{2}$ 12	12.00
62	" $\frac{1}{4}$ 20, $\frac{5}{16}$ 16, $\frac{1}{2}$ 12, $\frac{5}{8}$ 11, $\frac{3}{4}$ 10	15.50
63	" $\frac{5}{8}$ 11, $\frac{3}{4}$ 10, $\frac{7}{8}$ 9, 1" 8	17.00
64	" $\frac{1}{2}$ 12, $\frac{5}{8}$ 11, $\frac{3}{4}$ 10, $\frac{7}{8}$ 9, 1" 8	19.50
65	" $\frac{1}{4}$ 20, $\frac{5}{16}$ 18, $\frac{3}{8}$ 16, $\frac{7}{16}$ 14, $\frac{1}{2}$ 12, $\frac{5}{8}$ 11, $\frac{3}{4}$ 10	18.00
65½	" $\frac{1}{4}$ 20, $\frac{5}{16}$ 18, $\frac{3}{8}$ 16, $\frac{7}{16}$ 14, $\frac{1}{2}$ 12, $\frac{5}{8}$ 11, $\frac{3}{4}$ 10	20.50
66	" $\frac{3}{8}$ 16, $\frac{1}{2}$ 14, $\frac{5}{8}$ 12, $\frac{3}{4}$ 11, $\frac{7}{8}$ 9, 1" 8	24.00
67	" $\frac{1}{4}$ 20, $\frac{5}{16}$ 18, $\frac{3}{8}$ 16, $\frac{7}{16}$ 14, $\frac{1}{2}$ 12, $\frac{5}{8}$ 11, $\frac{3}{4}$ 10, $\frac{7}{8}$ 9, 1" 8	29.50
630	" $\frac{1}{8}$ 7, $\frac{1}{4}$ 7, $\frac{3}{8}$ 6, $\frac{1}{2}$ 6	43.50
640	" $\frac{1}{4}$ 20, $\frac{5}{16}$ 18, $\frac{3}{8}$ 16, $\frac{7}{16}$ 14, $\frac{1}{2}$ 12, $\frac{5}{8}$ 11, $\frac{3}{4}$ 10, $\frac{7}{8}$ 9, 1" 8, $1\frac{1}{8}$ 7, $1\frac{1}{4}$ 7	47.00
650	" $\frac{1}{4}$ 20, $\frac{5}{16}$ 18, $\frac{3}{8}$ 16, $\frac{7}{16}$ 14, $\frac{1}{2}$ 12, $\frac{5}{8}$ 11, $\frac{3}{4}$ 10, $\frac{7}{8}$ 9, 1" 8, $1\frac{1}{8}$ 7, $1\frac{1}{4}$ 7, $1\frac{3}{8}$ 6, $1\frac{1}{2}$ 6	67.00

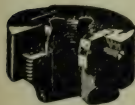
Separate Dies and Taps, etc., see B1338 and B1395, etc.

Each assortment has adjustable Tap Wrenches for holding Taps.

Sharp V either exact or rough iron sizes furnished at above list.

## LITTLE GIANT ADJUSTABLE DIES

COLLET  
COMPLETE



B1338

DIE



B1339

GUIDE



B1340

CAP



B1341

Size... inches	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$
Threads to inch	24	20	18	16	14	12	12	11	11
Die only	1.00	1.00	1.00	1.25	1.25	1.50	1.50	1.75	1.75
Collet only	.50	.50	.50	.50	.50	.50	.50	.50	.50
Size... inches	$\frac{3}{4}$	$1\frac{1}{8}$	$\frac{7}{8}$	$1\frac{1}{2}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Threads to inch	10	10	9	9	8	7	7	6	6
Die only	2.00	2.00	2.75	2.75	2.75	4.00	4.00	5.00	5.00
Collet only	.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Guides 1 inch and less, 20c;  $1\frac{1}{8}$  to  $1\frac{1}{2}$  inches, 50c.

Left Hand Dies furnished at same price as Right Hand.

For price list of Taps, see B1395, etc.

# ARMSTRONG'S STOCK AND DIES FOR BOLTS

For Blacksmiths and Machinists

Nos. 1 and 2 Plates packed in neat Hardwood Case.

No. 1	Stock, 7 Bolt Dies, $\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ , $\frac{1}{2}$ , $\frac{5}{8}$ and $\frac{3}{4}$ inch.....	each	15.00
" 1	" 4 Pipe " and 7 Bolt Dies as above .....	"	20.00
" 1	" 7 Bolt " " 7 Taps, $\frac{1}{4}$ to $\frac{3}{4}$ , as above .....	"	23.00
" 1	" 4 Pipe " 7 Bolt Dies and 7 Taps, as above .....	"	28.80
" 2	" 7 Bolt " $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ , $1$ , $1\frac{1}{8}$ and $1\frac{1}{4}$ inch .....	"	20.00
" 2	" 7 " " $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ , $1$ , $1\frac{1}{8}$ " $1\frac{1}{4}$ " and Taps.....	"	35.00
" 2	" 9 " " $\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ , $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ and $1$ inch .....	"	25.00
" 2	" 9 " " $\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ , $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ " $1$ " and Taps....	"	42.00
" 2	" 11 " " $\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ , $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ and $1$ in., also $1\frac{1}{8}$ and $1\frac{1}{4}$ in.....	"	30.00
" 2	" 11 " " $\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ , $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ " $1$ " $1\frac{1}{8}$ " $1\frac{1}{4}$ " and Taps .....	"	50.00
" 3	" 6 " " $\frac{1}{2}$ , $1$ , $1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ and $1\frac{1}{2}$ inch.....	"	38.00
" 3	" 6 " " $\frac{3}{8}$ , $1$ , $1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ " $1\frac{1}{2}$ " and Taps.....	"	54.00
" 3	" 9 " " $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ , $1$ , $1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ and $1\frac{1}{2}$ inch .....	"	55.00
" 3	" 9 " " $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ , $1$ , $1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ " $1\frac{1}{2}$ " and Taps .....	"	59.00

PARTS .....	Number	1	2	3
Stock .....		3.25	4.00	7.00
Bushings.....		.20	.25	.50
Bolt Dies, $\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ or $\frac{7}{16}$ inch.....	each	1.50	....	....
" " $\frac{1}{2}$ , $\frac{5}{8}$ or $\frac{3}{4}$ inch.....	"	1.75	....	....
" " $\frac{1}{4}$ to $1$ inch.....	"	....	2.00	....
" " $1\frac{1}{8}$ and $1\frac{1}{4}$ inch .....	"	....	2.25	....
" " $\frac{1}{2}$ to $1\frac{1}{2}$ inch.....	"	....	....	5.00

Threads per inch, regularly furnished, are  $\frac{1}{4}$  x 20,  $\frac{5}{16}$  x 18,  $\frac{3}{8}$  x 16,  $\frac{7}{16}$  x 14,  $\frac{1}{2}$  x 12,  $\frac{5}{8}$  x 11,  $\frac{3}{4}$  x 10,  $\frac{7}{8}$  x 9,  $1$  x 8,  $1\frac{1}{8}$  x 7,  $1\frac{1}{4}$  x 7,  $1\frac{3}{8}$  x 6, and  $1\frac{1}{2}$  x 6.

## OSTER SCREW PLATES WITH BOLT DIES

For Blacksmiths and Machinists. With Adjustable Dies and Guides

In Oak Case.		Black-smiths'	Machinists'
$\frac{1}{16}$ , $\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ and $\frac{1}{2}$ inch { Dies and 6 Taps.....	each	No. { 15.00	No. { 15.00
Extra Dies, Right or Left Hand.....	per set of 4 pieces	30 { 12.00	20 { 12.00
$\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ , $\frac{1}{2}$ , $\frac{5}{8}$ and $\frac{3}{4}$ inch { Dies and 7 Taps.....	each	31 { 20.00	21 { 20.00
Extra Dies, Right or Left Hand.....	per set of 4 pieces	31 { 16.00	21 { 16.00
$\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ , $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ and $1$ inch { Dies and 9 Taps.....	each	32 { 1.25	22 { 1.25
With Taper Plug and Bottoming Taps.....	"	32 { 30.00	22 { 30.00
Extra Dies, Right or Left Hand.....	per set of 4 pieces	32 { 23.00	24 { 23.00
$\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ , $1$ , $1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ and $1\frac{1}{2}$ inch { Dies and 9 Taps.....	each	28 { 1.50	28 { 1.50
Extra Dies, Right or Left Hand.....	per set of 4 pieces	28 { 48.00	28 { 35.00
$\frac{1}{4}$ , $\frac{5}{16}$ , $\frac{3}{8}$ , $\frac{7}{16}$ and $\frac{1}{2}$ inch { Dies and 5 Taps.....	each	54 { 14.00	64 { 14.00
With Taper Plug and Bottoming Taps.....	"	54 { 11.00	64 { 11.00
Extra Dies, Right or Left Hand.....	per set of 4 pieces	54 { 1.00	61 { 20.00
$\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{5}{8}$ and $\frac{3}{4}$ inch { Dies and 5 Taps.....	each	35 { 17.00	65 { 1.00
Extra Dies, Right or Left Hand.....	per set of 4 pieces	35 { 13.00	65 { 1.00
$\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ and $1$ inch { Dies and 5 Taps.....	each	36 { 1.25	65 { 23.00
With Taper Plug and Bottoming Taps.....	"	36 { 22.00	65 { 17.00
Extra Dies, Right or Left Hand.....	per set of 4 pieces	36 { 17.00	62 { 45.00
$1$ , $1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ and $1\frac{1}{2}$ inch { Dies and 5 Taps.....	each	37 { 1.50	66 { 1.50
With Taper Plug and Bottoming Taps.....	"	37 { 40.00	66 { 40.00
Extra Dies, Right or Left Hand.....	per set of 4 pieces	37 { 30.00	63 { 30.00
$\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ , $1$ , $1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ and $1\frac{1}{2}$ inch { Dies and 9 Taps.....	each	37 1/2 { 1.75	67 { 1.75
Extra Dies, Right and Left Hand.....	per set of 4 pieces	37 1/2 { 48.00	67 { 48.00
		37 1/2 { 35.00	67 { 35.00
		37 1/2 { 1.75	67 { 1.75

# PUMP ROD PLATES



B1345

Price, No. 12; 2 pair Dies cutting $\frac{3}{8}$ , 14; $\frac{7}{16}$ , 12.....each	3.00
Price, No. 13; 3 pair Dies cutting $\frac{3}{8}$ , 14; $\frac{7}{16}$ , 12, and $\frac{1}{2}$ in 12.....each	3.50

Extra Dies, Each Size  $\frac{3}{8}$ ,  $\frac{7}{16}$  or  $\frac{1}{2}$  inch, 75c. per pair.

# DERBY PUMP ROD STOCK AND DIE

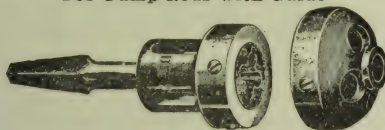


B1346

Price, Double Stock with One Die each, $\frac{3}{8}$ , 14, and $\frac{7}{16}$ , 12 complete.....each	3.00
Extra Dies and Guide, $\frac{3}{8}$ , 14 thread, $\frac{7}{16}$ , 12 thread or $\frac{1}{2}$ , 12 thread.....each	1.35

# BITT BRACE DIE HOLDER AND DIE

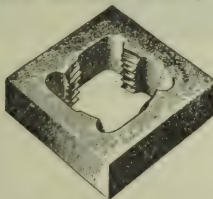
For Pump Rods with Guide



B1347

Die Holder 75c., Guide  $\frac{3}{8}$  or  $\frac{7}{16}$ , 20c. each, Die  $\frac{3}{8}$ , 14 or  $\frac{7}{16}$ , 12 thread each, 75c. Dies can be furnished  $\frac{3}{16}$ ,  $\frac{1}{4}$  or  $\frac{1}{2}$  inch if desired.

# SQUARE SOLID BOLT DIES



B1348

Price each Die, cutting one size. State whether even size or our size is wanted.  
 $2\frac{1}{2}$  inch Sq. x  $\frac{1}{2}$  inch thick cutting ( $\frac{1}{4}$  in 20 or 18), ( $\frac{5}{16}$  in 18 or 16), ( $\frac{3}{8}$  in 16 or 14), ( $\frac{7}{16}$  in 14), each \$1.80.  
 $2\frac{1}{2}$  inch Sq. x  $\frac{3}{4}$  inch thick cutting ( $\frac{1}{2}$  in 12 or 13 \$1.80), ( $\frac{1}{2}$  in 12 \$1.90), ( $\frac{3}{8}$  in 11 or 12 \$2.00).  
 $2\frac{1}{2}$  inch Sq. x  $\frac{3}{4}$  inch thick cutting ( $\frac{1}{2}$  in 11 \$2.15), ( $\frac{3}{4}$  in 10 or 12 \$2.25), ( $\frac{1}{2}$  in 10 \$2.30).  
 $2\frac{1}{2}$  inch Sq. x  $\frac{3}{4}$  inch thick cutting ( $\frac{3}{8}$  in 9 or 12 \$2.40), ( $\frac{1}{2}$  in 9 \$2.55).  
 $2\frac{1}{2}$  inch Sq. x 1 inch thick cutting (1 in 8 or 12 \$2.70), ( $\frac{1}{2}$  in 7 \$3.00), ( $\frac{1}{4}$  in 7 \$3.30), ( $\frac{1}{2}$  in 6 \$3.60).  
3 inch Sq. x 1 inch thick cutting ( $\frac{1}{2}$  in 6 \$3.90), ( $\frac{1}{2}$  in 5 \$4.20).  
3 inch Sq. x  $1\frac{1}{4}$  inch thick cutting ( $\frac{1}{2}$  in 5 \$5.40).  
 $3\frac{1}{2}$  inch Sq. x  $1\frac{1}{2}$  inch thick cutting ( $\frac{1}{2}$  in 4 \$6.50).  
 $3\frac{1}{2}$  inch Sq. x 2 inch thick cutting (2 in 4 \$7.50).



SAUNDERS ROLLER PIPE CUTTER



B1350

Number .....	1	2	3	4	5
Cuts Pipe .....inches	$\frac{1}{8}$ to 1	1 to 2	2 to 3	$2\frac{1}{2}$ to 4	4 to 6
Price .....each	3.00	4.50	11.00	18.00	28.00
“ Extra Wheels..... “	.24	.32	.60	.60	.60
“ “ Block and Wheel. “	1.25	1.75	2.75	3.50	4.00
“ “ Rollers..... “	.24	.32	.50	.50	.60
“ “ Pins..... “	.10	.10	.15	.15	.15

BARNES THREE WHEEL PIPE CUTTER



B1351

Number...	1	2	3	4	5	6	7
Cuts Pipe .inches	$\frac{1}{8}$ to 1	$\frac{1}{2}$ to 2	$1\frac{1}{2}$ to 3	$2\frac{1}{2}$ to 4	4 to 6	6 to 8	9 to 12
Price..each	4.50	6.00	10.00	20.00	30.00	40.00	50.00
Ex. Wheels “	.25	.30	.40	.50	.75	.75	.75
Ex.Wheel Pins “	.10	.10	.10	.20	.20	.25	.25

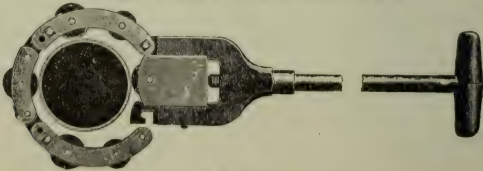
TRIMO COMBINATION PIPE CUTTER



B1352

Number .....	1	2	3
Cuts Pipe .....inches	$\frac{1}{8}$ to $1\frac{1}{4}$	$\frac{1}{2}$ to 2	$1\frac{1}{4}$ to 3
Price.....each	4.50	6.00	10.00
“ Extra Wheels..... “	.30	.30	.40
“ “ Rolls..... “	.30	.30	.40

HALL CAST PIPE CUTTER



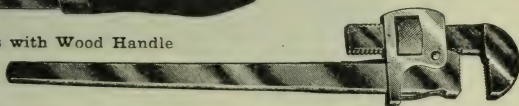
B1353

No. 1, 4 to 8 inches, \$25.00. No. 2, 10 to 14 inches, \$34.00. No. 3, 16 to 24 inches, \$50.00.

# STILLSON PIPE WRENCHES



Small Sizes with Wood Handle



Large Sizes with Steel Handle.



Jaw.



Frame.



Nut.



Wood Handle.

B1355

Pipe Sizes.....	$\frac{1}{8}$ in. to $\frac{1}{2}$ in.	$\frac{1}{8}$ in. to $\frac{3}{4}$ in.	$\frac{1}{8}$ in. to 1 in.	$\frac{1}{4}$ in. to $1\frac{1}{2}$ in.	$\frac{1}{4}$ in. to 2 in.	$\frac{1}{4}$ in. to $2\frac{1}{2}$ in.	$\frac{1}{2}$ in. to $3\frac{1}{2}$ in.	1 in. to 5 in.
Length, Open.....inches	6	8	10	14	18	24	36	48
Price.....each	2.00	2.00	2.25	3.00	4.00	6.00	12.00	18.00
Extra Jaws....."	.75	.75	.80	1.00	1.33	2.10	4.75	7.25
" Frames....."	.35	.35	.40	.50	.55	.80	1.30	1.50
" Nuts....."	.11	.11	.14	.17	.22	.35	.55	.95
" Wood Handles...."	.16	.16	.18	.25	.28	.....	.....	.....
" Steel Handles...."	.95	.95	1.10	1.45	2.10	3.20	6.40	9.25

# "TRIMO" PIPE WRENCHES

B1356



FRAME

NUT

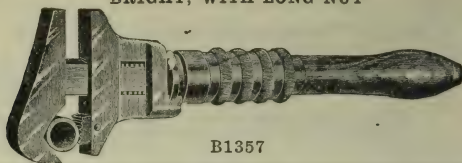
INSERTED JAW

SPRING AND PIN

Pipe Sizes.....	$\frac{1}{8}$ in. to $\frac{1}{2}$ in.	$\frac{1}{8}$ in. to $\frac{3}{4}$ in.	$\frac{1}{8}$ in. to 1 in.	$\frac{1}{4}$ in. to $1\frac{1}{2}$ in.	$\frac{1}{2}$ in. to 2 in.	$\frac{1}{4}$ in. to $2\frac{1}{2}$ in.	$\frac{1}{2}$ in. to $3\frac{1}{2}$ in.	1 in. to 5 in.
Length, Open.....inches	6	8	10	14	18	24	36	48
Price.....each	2.00	2.00	2.25	3.00	4.00	6.00	12.00	18.00
Movable Jaw....."	.67	.67	.75	1.00	1.33	2.00	4.00	6.00
Nut....."	.20	.20	.27	.35	.42	.50	.65	.80
Inserted Jaw....."	.25	.25	.33	.50	.55	.65	1.00	1.25
Frame....."	.25	.25	.33	.45	.55	.65	.75	1.00
Springs....."	.03	.03	.03	.03	.04	.04	.04	.04
Pins (Frame or Jaw)...."	.03	.03	.03	.03	.04	.04	.04	.04

**B. & C. COMBINATION WRENCHES**

BRIGHT, WITH LONG NUT



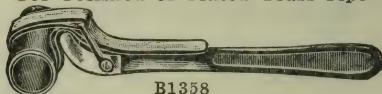
B1357

Length.....inches	10	12	15	18
Pipe Size.....inches	$\frac{1}{2}$ to 1	$\frac{1}{2}$ to $1\frac{1}{2}$	$\frac{1}{2}$ to 2	$\frac{1}{2}$ to 3
Price.....per doz.	25.25	28.50	40.50	72.00

Black Wrenches Same List as Bright

**BRASS PIPE WRENCH**

For Polished or Plated Brass Pipe



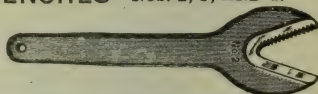
B1358

Length.....10 inches	Takes Pipe $\frac{1}{8}$ to 2 inches.	Price....	1.50
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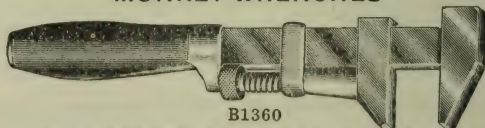
Extra Straps, each 50c.

**No. 1. ALLIGATOR WRENCHES Nos. 2, 3, AND 4.**

B1359



Size.....	No. 1	No. 2	No. 3	No. 4	No. 5
Holds Pipe.....inches	$\frac{1}{8}$ to $\frac{3}{8}$	$\frac{3}{8}$ to $\frac{3}{4}$	$\frac{1}{2}$ to $1\frac{1}{4}$	$1\frac{1}{4}$ to 2	2 to 3
Holds Round Iron. "	$\frac{1}{4}$ to $\frac{3}{4}$	$\frac{1}{2}$ to 1	$\frac{3}{4}$ to $1\frac{1}{2}$	$1\frac{1}{2}$ to $2\frac{1}{2}$	$2\frac{1}{4}$ to $3\frac{1}{2}$
Length.....	$5\frac{1}{4}$	9	16	22	27
Price.....per doz.	4.00	12.00	24.00	36.00	54.00

**MONKEY WRENCHES**

B1360

COE'S KNIFE HANDLE WROUGHT WRENCH

Length.....inches	6	8	10	12	15	18	21
Will Open.....inches	$\frac{7}{8}$	$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{8}$	$2\frac{5}{8}$	3	$4\frac{1}{8}$
Price.....per doz.	9.00	10.00	12.00	14.00	24.00	30.00	36.00

**AGRICULTURAL MALLEABLE BAR WRENCH — B1361**

Length.....inches	6	8	10	12	15	18
Price.....per doz.	10.00	12.00	14.00	17.00	24.00	30.00

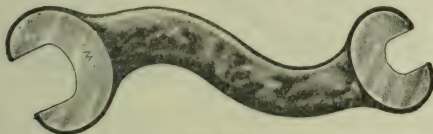
## ADJUSTABLE "S" WRENCHES



B1362

Size .....	inches	6	8	10	12	14
Open .....	inches	$\frac{3}{4}$	1	$1\frac{3}{8}$	$1\frac{5}{8}$	2
Price .....	each	.60	.75	1.00	1.25	1.75

## DROP FORGED "S" WRENCHES

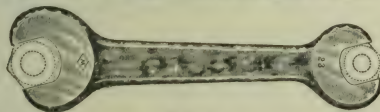


B1363

## Price Unfinished

Number.....	344	348	354	359	363	365	366	367
Sizes.....inches	$\frac{3}{8}$ & $\frac{7}{16}$	$\frac{1}{2}$ & $\frac{9}{16}$	$\frac{5}{8}$ & $\frac{3}{4}$	$\frac{3}{4}$ & $\frac{7}{8}$	$\frac{7}{8}$ & 1	1 & $1\frac{1}{8}$	1 & $1\frac{1}{4}$	
Length..... "	4	5	6	7	8	8	9	9
Price..... each	.10	.15	.20	.25	.30	.30	.35	.35

## ENGINEERS' WRENCHES, DOUBLE HEAD



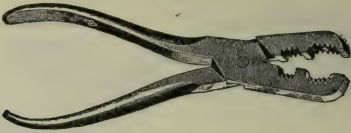
B1364

No.	Bolt Size	Openings Inch	Length Inch	Unfinished Each	No.	Bolt Size	Openings Inch	Length Inch	Unfinished Each
29	$\frac{3}{8}$ and $\frac{7}{16}$	$\frac{1}{16}$ and $\frac{5}{32}$	6 $\frac{3}{8}$	.25	43	1 and $1\frac{1}{8}$	$\frac{1}{8}$ and $1\frac{3}{16}$	17	1.08
30	$\frac{3}{8}$ and $\frac{1}{2}$	$\frac{1}{16}$ and $\frac{3}{8}$	7 $\frac{1}{4}$	.28	44	1 and $1\frac{1}{4}$	$\frac{1}{8}$ and 2	19	1.27
31	$\frac{1}{2}$ and $\frac{1}{2}$	$\frac{1}{16}$ and $\frac{3}{8}$	7 $\frac{1}{4}$	.30	45	$1\frac{1}{8}$ and $1\frac{1}{4}$	$\frac{1}{8}$ and 2	19	1.35
32	$\frac{1}{2}$ and $\frac{1}{2}$	$\frac{1}{16}$ and $\frac{3}{8}$	7 $\frac{1}{4}$	.34	46	$1\frac{1}{8}$ and $1\frac{1}{4}$	$\frac{1}{8}$ and 2	21	1.65
33	$\frac{1}{2}$ and $\frac{1}{2}$	$\frac{1}{16}$ and $\frac{3}{8}$	8 $\frac{1}{4}$	.36	47	$1\frac{1}{4}$ and $1\frac{3}{8}$	$\frac{1}{8}$ and 2	21	1.75
34	$\frac{1}{2}$ and $\frac{1}{2}$	$\frac{1}{16}$ and $\frac{3}{8}$	9 $\frac{1}{4}$	.41	48	$1\frac{1}{4}$ and $1\frac{1}{2}$	$\frac{1}{8}$ and 2	23	2.10
35	$\frac{1}{2}$ and $\frac{1}{2}$	$\frac{1}{16}$ and $\frac{3}{8}$	9 $\frac{1}{4}$	.43	49	$1\frac{3}{8}$ and $1\frac{1}{2}$	$\frac{1}{8}$ and 2	23	2.25
96	$\frac{1}{2}$ and $\frac{1}{2}$	$\frac{1}{16}$ and $\frac{3}{8}$	11 $\frac{1}{2}$	.50	50	$1\frac{3}{8}$ and $1\frac{1}{2}$	$\frac{1}{8}$ and 2	25	2.65
37	$\frac{5}{8}$ and $\frac{3}{4}$	$\frac{1}{16}$ and $\frac{3}{8}$	11 $\frac{1}{2}$	.53	51	$1\frac{1}{2}$ and $1\frac{3}{4}$	$\frac{1}{8}$ and 2	25	2.85
38	$\frac{5}{8}$ and $\frac{3}{4}$	$\frac{1}{16}$ and $\frac{3}{8}$	13 $\frac{1}{2}$	.62	52	$1\frac{1}{2}$ and $1\frac{3}{4}$	$\frac{1}{8}$ and 2	27	3.30
39	$\frac{3}{4}$ and 1	$\frac{1}{16}$ and $\frac{3}{8}$	13 $\frac{1}{2}$	.65	53	$1\frac{3}{4}$ and 2	$\frac{1}{8}$ and 2	27	3.55
40	$\frac{3}{4}$ and 1	$\frac{1}{16}$ and $\frac{3}{8}$	15 $\frac{1}{2}$	.78	54	$1\frac{3}{4}$ and 2	$\frac{1}{8}$ and 2	30 $\frac{1}{2}$	4.15
41	$\frac{3}{4}$ and 1	$\frac{1}{16}$ and $\frac{3}{8}$	15 $\frac{1}{2}$	.82	55	$1\frac{3}{4}$ and 2	$\frac{1}{8}$ and 2	30 $\frac{1}{2}$	4.55
42	$\frac{3}{4}$ and 1	$\frac{1}{16}$ and $\frac{3}{8}$	17	1.00	55 $\frac{1}{2}$	$1\frac{3}{4}$ and 2	$\frac{1}{8}$ and 2	30 $\frac{1}{2}$	4.55

Unfinished Wrenches have milled openings.



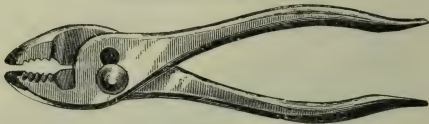
GAS PLIERS



B1366

Length.....inches	7	8	9	10	12	14
Polished.....per dozen	7.40	8.25	9.25	10.70	13.00	17.00

COMBINATION PLIERS



B1367

Length.....inches	6	8	10
Nickel Plated.....per dozen	15.00	18.00	21.00

COMBINATION PLIERS AND WIRE CUTTERS



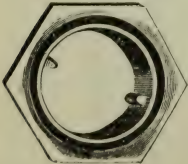
B1368

Length.....inches	4½	6	8	10	12
Will Cut Wire.....number	14	11	8	6	5
Price.....per dozen	10.00	12.00	15.00	20.00	30.00

IDEAL RADIATOR VALVE UNION NIPPLE WRENCH

THE NIPPLE

THE WRENCH

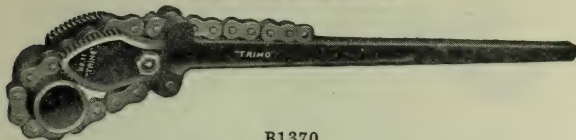


B1369

Wrenches, catching 1, 1¼, 1½ and 2 inch.....each	1.50
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# TRIMO CHAIN PIPE TONGS

With Flat Link Chain



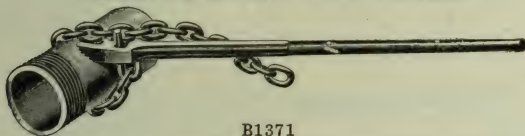
B1370

Sizes .....	No. 10	No. 11	No. 12	No. 13	No. 14	No. 15	No. 16
With Flat Link Chain..each	2.50	3.50	5.00	7.00	9.00	11.00	18.00
" Cable Chain ..	2.25	3.25	4.50	6.25	7.70	9.50	16.00
Sizes Pipe.....inches	$\frac{1}{8}$ to 1	$\frac{1}{8}$ to 2	$\frac{1}{4}$ to 3	$\frac{3}{4}$ to 6	1 to 8	$1\frac{1}{2}$ to 10	2 to 12
Length .....	13 $\frac{3}{4}$	20	27	37	45	54	65
Weight .....	1 $\frac{1}{8}$	5	9	18	27	49	83
Extra Chains .....	.75	1.00	1.50	2.50	3.25	4.00	6.00
" Jaws .....	1.00	1.75	2.75	4.00	4.75	5.50	7.50
" Bolt and Nut .. each	.20	.20	.20	.20	.25	.25	.30

## PRICE LIST VULCAN FLAT LINK CHAIN TONGS

Number.....	10	11	12	13	13 $\frac{1}{2}$	14	15	16
Length .....inches	13 $\frac{3}{4}$	20	27	37	44 $\frac{1}{2}$	50 $\frac{1}{2}$	64 $\frac{1}{2}$	87
Takes Pipe.. "	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{1}{8}$ to $1\frac{1}{2}$	$\frac{1}{4}$ to $2\frac{1}{2}$	$\frac{3}{4}$ to 4	1 to 6	$1\frac{1}{2}$ to 8	2 to 12	4 to 18
With Flank Link Chain, ea.	2.50	3.50	5.00	7.00	9.00	11.00	18.00	40.00

# ROBBINS CHAIN PIPE TONGS



B1371

Number .....	2	3	4	5	6	7
Length of Lever....feet	2 $\frac{3}{4}$	3	4	5	6	7
Price .....	5.50	6.25	9.00	12.50	16.00	30.00
Takes Pipe.....inches	1 to 2	$1\frac{1}{4}$ to 4	2 to 6	$2\frac{1}{2}$ to 8	4 to 10	4 to 16
Diam. of Chain (Link) "	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{3}{4}$
Average Weight..pounds	7	12	24	33	50	115



## "AGRIPPA" FITTINGS WRENCH

B1372

Size.....number	20	21	22	23	23 $\frac{1}{2}$	24	25
Price .....	2.50	3.50	5.00	7.00	9.00	11.00	18.00
Capacity, Fittings..inches	$\frac{1}{2}$ to $\frac{3}{4}$	$\frac{1}{2}$ to $1\frac{1}{2}$	$\frac{1}{4}$ to $2\frac{1}{2}$	$\frac{3}{4}$ to 4	1 to 6	$1\frac{1}{2}$ to 8	2 to 12
Length Over All..... "	13 $\frac{3}{4}$	20	27	37	44 $\frac{1}{2}$	50 $\frac{1}{2}$	64 $\frac{1}{2}$
Extra Jaws .....	1.00	1.75	2.75	4.00	4.75	5.50	7.50
Extra Chains .....	1.00	1.25	1.75	2.75	3.75	4.50	6.75

LAY PIPE TONGS

With Adjustable Bits



B1373

Pipe Size.....inches	1	1¼	1½	2	2½	3	3½	4
Regular.....each	4.00	4.25	4.50	5.00	5.50	6.00	7.50	9.00
Extra Heavy Long Handles... “	5.00	5.50	5.75	6.00	6.75	8.75	9.00	9.75
“ Bits.....per doz.	2.50	2.50	2.50	2.50	2.50	3.50	3.50	3.50
Pipe Size.....inches	4½	5	5½	6	7½	8	10	12
Regular.....each	10.00	10.50	12.00	13.00	25.00	25.00	27.50	32.00
Extra Heavy Long Handles... “	14.00	14.00	16.00	16.00	29.00	29.00	33.00	40.00
“ Bits.....per doz.	3.50	3.50	3.50	3.50	5.00	5.00	5.00	5.00

Extra Heavy Short Handle Tongs or Steel Lined Tongs—quoted on application.

CRUMBIE PIPE TONGS



B1374

Size..... inches	¾	1	1¼	1½	2	2½	3	3½
Tongs.....each	2.25	2.50	3.25	3.50	4.50	5.00	8.25	9.00
Small Jaw..... “	.75	.75	.90	1.00	1.25	1.25	1.50	1.50
Large Jaw..... “	1.00	1.00	1.10	1.25	1.50	1.50	2.00	2.60

BROWN'S ADJUSTABLE PIPE TONGS

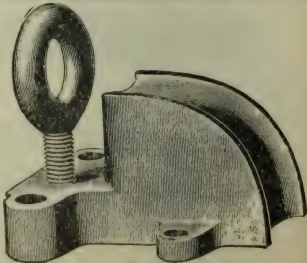


B1375

Number.....	1	1½	2	3	4	5	6	7
Takes Pipe. inches	¾ to ¾	¾ to 1	½ to 1¼	1 to 2	1½ to 3	2½ to 4	3 to 5	4 to 7
Price.....each	.60	.75	.85	1.20	2.70	6.00	10.00	11.00

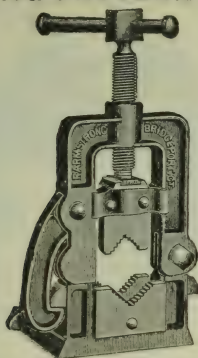
PIPE BENDING FORM

No. 1 takes ⅜ to 1¼ in. (11 lbs)....ea.	3.50
No. 2 “ 1 to 2 “ (21 lbs).... “	4.50



B1376

## ARMSTRONG PATTERN PIPE VISE

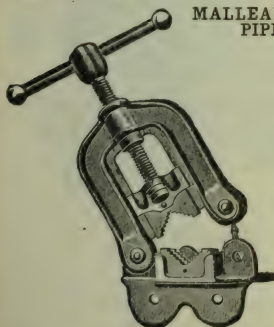


B1380

Number .....	1	2	3
Holds Pipe.....	$\frac{1}{8}$ to $2\frac{1}{2}$	$\frac{1}{2}$ to $4\frac{1}{2}$	1 to 6
Price.....each	10.00	20.00	30.00
Upper Jaws....."	.50	.75	2.00
Lower ".....pair	1.00	1.50	4.00

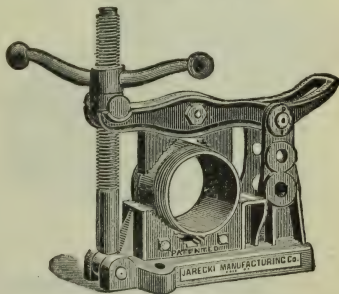
## BRASS PIPE JAWS FOR No. 1 ARMSTRONG VISE

$\frac{5}{8}$ , $\frac{3}{4}$ or $\frac{7}{8}$ Outside Diameter } .....	each Size, Set	.75
$1\frac{1}{8}$ , $1\frac{1}{4}$ " $\frac{3}{4}$ I. P. Size.....	" " "	1.00
$1\frac{1}{2}$ , $1\frac{3}{4}$ " $1\frac{1}{2}$ Outside Diameter.....	" " "	1.25
$1\frac{3}{8}$ , $1\frac{1}{2}$ or $1\frac{5}{8}$ " ".....	" " "	1.50
$\frac{1}{2}$ , $\frac{3}{4}$ or 1 I. P. Size.....	" " "	1.75
$1\frac{3}{4}$ , $1\frac{1}{2}$ or 2 Outside Diameter.....	" " "	
$2\frac{1}{8}$ , $2\frac{1}{4}$ " $2\frac{3}{8}$ ".....	" " "	
$1\frac{1}{4}$ , $1\frac{1}{2}$ " 2 I. P. Size.....	" " "	

MALLEABLE HINGE  
PIPE VISE

B1381

## JARECKI PIPE VISE

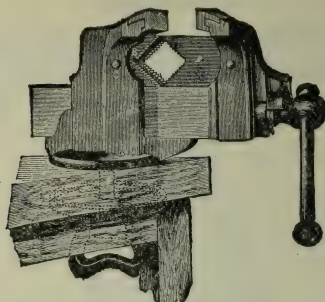


B1382

No. 1. Pipe $\frac{1}{4}$ to 2 in.....	10.00	No. 1A. $\frac{1}{8}$ to 2 in. Pipe.....	12.00
" 2. " $\frac{1}{8}$ " 3 ".....	14.00	No. 2A. $\frac{1}{4}$ " 4 " ".....	16.00
		No. 3A. $1\frac{1}{2}$ to 6 in. Pipe....	24.00
		No. 4A. 6 to 12 " ".....	60.00



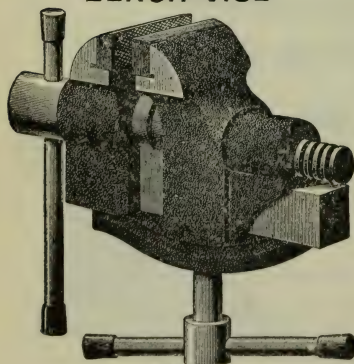
## COMBINATION PIPE VISE



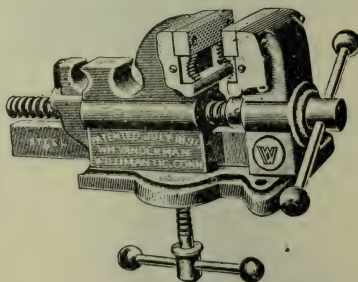
B1384

Number .....	1	2	3
Holds Pipe.....inches	$\frac{1}{8}$ to 2	$\frac{1}{4}$ to 3	$\frac{1}{4}$ to 4
Price.....each	16.00	20.00	28.00
Parallel Jaws....."	.50	.50	.50
Back Jaw with Parallel Jaw....."	3.00	3.75	4.25
Front or Sliding Jaw with Parallel Jaw....."	3.00	3.75	4.25
Short V Pipe Jaw Double....."	1.25	1.75	2.25
Long V " " Single....."	.75	1.00	1.25
Screw Nut Handle and Collar....."	1.75	2.00	2.25
Nuts....."	.25	.35	.45

Collar for Screw, 10c each; Small Washers, 10c each; Bench Bolts, 15c each; Large Washers, Swivel, 20c each; Hand Nuts, 25c each.

HEAVY  
BENCH VISE

B1385

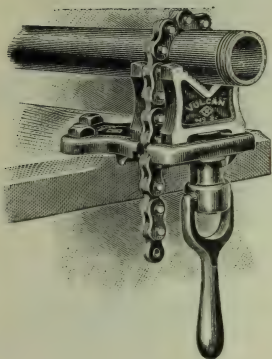
VANDERMAN  
COMBINATION VISE

B1386

No. 0, Pipe $\frac{1}{8}$ to 2 $\frac{1}{2}$ inch.....	15.00
No. 1 " $\frac{1}{8}$ to 7 " .....	20.00
No. 3 " $\frac{1}{8}$ to 10 " .....	30.00

Has Pipe-bending Form. No. 0, up to 1 inch; No. 1, up to 1 $\frac{1}{2}$  inch; No. 3, up to 2 inch.

No. 1 Holds Pipe $\frac{1}{8}$ to 4 inches..	18.00
Extra Jaws.....per pair	1.75
Jaw Screws, net.....each	.05



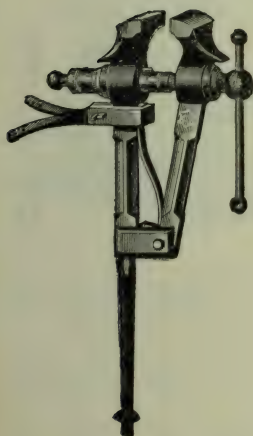
# VULCAN CHAIN PIPE VISE

B1388

Holds pipe  $\frac{1}{2}$  inch to  $2\frac{1}{2}$  inch. For Bolts, Bars, Shafts, etc.

Price, No. 2.....each | 5.00

Jaws, \$2.25 per chain, \$1.25 each.  
Weight 10 lbs.



# SOLID BOX VISES

B1388 $\frac{1}{2}$

No.	Approx. Weight Pounds	Width of Jaw Inches	Price Each
25	25	3 $\frac{1}{4}$	12.00
30	30	3 $\frac{3}{8}$	11.00
35	35	3 $\frac{3}{4}$	10.00
40	40	4	10.50
45	45	4 $\frac{1}{4}$	11.00
50	50	4 $\frac{1}{2}$	11.50
55	55	4 $\frac{3}{4}$	12.00
60	60	5	13.00
65	65	5	14.00
70	70	5 $\frac{1}{4}$	15.00
75	75	5 $\frac{1}{4}$	16.00
80	80	5 $\frac{1}{2}$	17.50
85	85	5 $\frac{1}{2}$	18.50
90	90	5 $\frac{3}{4}$	20.00
95	95	5 $\frac{3}{4}$	21.00
100	100	6	22.00
110	110	6	24.00
120	120	6 $\frac{1}{2}$	26.00

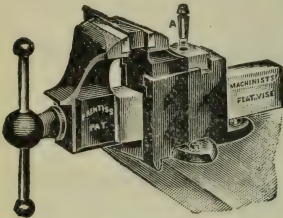
Larger sizes quoted on application.

VICES

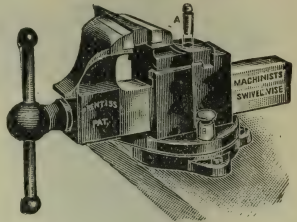
MACHINISTS' SELF ADJUSTING JAW VISES

STATIONARY BOTTOM

SWIVEL BOTTOM



B1389



B1390

STATIONARY BOTTOM

Number.....	1	2	2½	3	4	5	6
Width of Jaw.....inches	2½	3½	4	4½	5¼	6	7
Opens....."	3½	4¾	5¼	6	8	9	11
Weight.....pounds	13¼	28	41	54	96	146	184
Price.....each	5.50	7.00	9.00	10.50	17.00	24.00	30.00

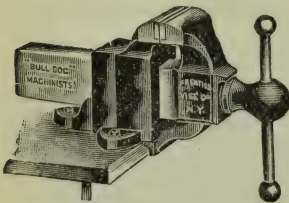
SWIVEL BOTTOM

Number.....	18	19	19½	20	21	22	23
Width of Jaw.....inches	2½	3½	4	4½	5¼	6	7
Opens....."	3½	4¾	5¼	6	8	9	11
Weight.....pounds	17	32	46	65	109	168	207
Price.....each	6.75	8.50	10.50	12.50	19.00	27.00	35.00

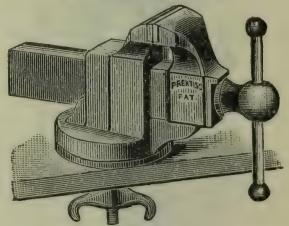
MACHINISTS' SOLID JAW "BULL DOG" VISES

STATIONARY BOTTOM

SWIVEL BOTTOM



B1391



B1392

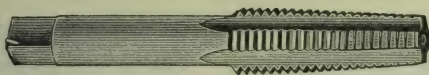
STATIONARY BOTTOM

Number.....	50	51	52	53	54	55	56	57
Width of Jaw..... inches	3¼	3¾	4½	4¾	5	5½	6	7
Opens....."	4	5½	6	7	8	9	10	12
Weight.....pounds	22	28	42	52	72	100	135	210
Price.....each	6.00	7.00	8.50	10.00	13.00	18.50	25.00	37.50

SWIVEL BOTTOM

Number.....	90	91	92	93	94	95	96	97
Width of Jaw.....inches	5¼	3¾	4½	4¾	5	5½	6	7
Opens....."	4	5½	6	7	8	9	10	12
Weight.....pounds	28	36	52	64	85	115	155	235
Price.....each	7.50	8.75	10.50	12.50	16.00	22.00	30.00	42.50

# MACHINIST HAND TAPS



TAPER  
B1395



PLUG  
B1396



BOTTOMING  
B1397

## MACHINE OR NUT TAP—B1398



Diameter Inches	Standard V Threads	Use Drill Diam.	NUMBER OF THREADS TO INCH	HAND TAPS		Machine Tap Each
			Can also Furnish Hand Taps	Price Each	Price Per Set	
$\frac{3}{16}$	24	No. 29	30, 32, 36,	.35	1.05	.....
$\frac{1}{4}$	20	No. 14	24, 27, 32,	.45	1.35	.60
$\frac{5}{16}$	18	$15_{64}$	20, 24, 27, 32,	.50	1.50	.70
$\frac{3}{8}$	16	L	14, 18, 20, 24, 27,	.55	1.65	.80
$\frac{7}{16}$	14	R	12, 16, 20, 24, 27,	.60	1.80	.90
$\frac{1}{2}$	12	$25_{64}$	13, 14, 16, 20, 24, 27,	.70	2.10	1.00
$\frac{9}{16}$	12	$29_{64}$	14, 27,	.80	2.40	1.15
$\frac{5}{8}$	11	$\frac{1}{2}$	10, 12, 20, 24, 27,	.90	2.70	1.30
$\frac{11}{16}$	11	.....	10, 12,	1.05	3.15	1.45
$\frac{3}{4}$	10	$39_{64}$	12, 20, 27,	1.20	3.60	1.60
$\frac{13}{16}$	10	$43_{64}$	12,	1.40	4.20	1.80
$\frac{7}{8}$	9	$23_{32}$	10, 12, 27,	1.60	4.80	2.10
$\frac{15}{16}$	9	$25_{32}$	12,	1.80	5.40	2.40
1	8	$53_{64}$	12, 27,	2.00	6.00	2.80
$1\frac{1}{16}$	8	$57_{64}$	8,	2.15	6.45	.....
$1\frac{1}{8}$	7	$59_{64}$	8, 12,	2.25	6.75	3.20
$1\frac{1}{4}$	7	$63_{64}$	.....	2.45	7.35	.....
$1\frac{3}{8}$	7	$13_{64}$	12,	2.60	7.80	3.70
$1\frac{1}{2}$	7	$17_{64}$	.....	2.80	8.40	.....
$1\frac{3}{4}$	6	$11_{8}$	.....	3.00	9.00	4.20
$1\frac{7}{8}$	6	$13_{16}$	.....	3.25	9.75	.....
$2$	6	$117_{64}$	.....	3.50	10.50	4.70
$2\frac{1}{8}$	5	$121_{64}$	.....	4.20	12.60	5.30
$2\frac{1}{4}$	5	$129_{64}$	.....	5.00	15.00	6.00
$2\frac{3}{8}$	$4\frac{1}{2}$	$135_{64}$	.....	5.80	17.40	6.80
$2\frac{1}{2}$	$4\frac{1}{2}$	$143_{64}$	.....	6.70	20.10	7.70
$2\frac{7}{8}$	$4\frac{1}{2}$	.....	.....	8.00	24.00	9.00
$3$	$4\frac{1}{2}$	.....	.....	9.20	27.60	10.20
$3\frac{1}{8}$	$4\frac{1}{2}$	.....	.....	10.50	31.50	11.50
$3\frac{1}{4}$	4	.....	.....	11.50	34.50	12.50
$3\frac{3}{8}$	4	.....	.....	13.00	39.00	14.00
$3\frac{1}{2}$	4	.....	.....	14.00	42.00	15.00
$3\frac{3}{4}$	4	.....	.....	15.50	46.50	16.50
$4$	$3\frac{1}{2}$	.....	.....	17.00	51.00	18.00
$4\frac{1}{8}$	$3\frac{1}{2}$	.....	.....	18.75	56.25	19.75

Hand Taps, with left hand threads of standard size and pitch,  $\frac{1}{4}$  to 2 inches diameter, furnished at regular prices.



## PIPE TAPS AND REAMERS

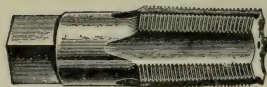


Fig. B1400

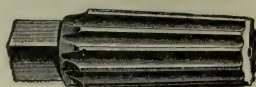


Fig. B1401

Pipe size..in.	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Threads per inch..	27	18	18	14	14	$11\frac{1}{2}$	$11\frac{1}{2}$	$11\frac{1}{2}$	$11\frac{1}{2}$	8	8
Price....each	1.12	1.25	1.50	1.87	2.50	3.12	3.75	4.62	6.25	10.50	15.00

## DRILL SIZES FOR PIPE TAPS

Diameter of Tap Inches	Diameter of Drill Inches	Diameter of Tap Inches	Diameter of Drill Inches	Diameter of Tap Inches	Diameter of Drill Inches
$\frac{1}{8}$	$\frac{21}{64}$	$\frac{3}{4}$	$\frac{15}{16}$	2	$\frac{23}{16}$
$\frac{1}{4}$	$\frac{29}{64}$	1	$\frac{13}{16}$	$2\frac{1}{2}$	$\frac{21}{16}$
$\frac{3}{8}$	$\frac{19}{32}$	$1\frac{1}{4}$	$\frac{13}{32}$	3	$\frac{35}{16}$
$\frac{1}{2}$	$\frac{23}{32}$	$1\frac{1}{2}$	$\frac{13}{32}$		

## COMBINED DRILL, REAMER AND TAP

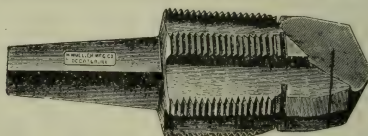


Fig. B1402

Diameter.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Price.....each	4.95	5.45	6.30	7.70	9.00	11.80

## BOILER PATCH BOLT TAP



Fig. B1403

Diameter.....inches	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$
Number threads to inch.....	12	12	12	12	12	12	12
Price.....each	.70	.80	.90	1.05	1.20	1.40	1.60
Diameter.....inches	$\frac{15}{16}$	1	$1\frac{1}{16}$	$1\frac{1}{8}$	$1\frac{3}{16}$	$1\frac{1}{4}$	....
Number threads to inch.....	12	12	12	12	12	12	....
Price.....each	1.80	2.00	2.15	2.25	2.45	2.60	....

# STAY-BOLT TAPS



B1404

Diameter Inches	LENGTH, INCHES. PRICE EACH											
	12	14	16	18	21	24	27	30	33	36	39	42
$\frac{3}{4}$ , $\frac{11}{16}$ , $\frac{7}{8}$	4.50	5.00	5.60	7.20	8.00	8.80	10.90	13.00	14.00	15.00	16.50	18.00
$\frac{13}{16}$ , 1	....	....	6.60	8.50	9.35	10.20	12.25	14.25	15.40	16.50	18.15	19.75
$1\frac{1}{16}$ , $1\frac{1}{8}$	....	....	7.60	9.50	10.35	11.20	13.25	15.25	16.40	17.50	20.00	22.00
$1\frac{3}{16}$ , $1\frac{1}{4}$	....	....	9.00	10.50	12.00	12.75	14.75	16.50	18.00	19.50	22.00	24.00
$1\frac{5}{16}$ , $1\frac{3}{8}$	....	....	11.00	12.50	14.00	15.00	17.00	18.50	20.00	21.50	24.00	26.00
$1\frac{7}{16}$ , $1\frac{1}{2}$	....	....	13.00	14.50	16.00	17.00	19.00	20.00	22.00	23.50	26.00	28.00

Longer Taps quoted on application.

In Ordering Stay-Bolt Taps state diameter and number of threads to the inch; also length of parts, A, B, C, D and E; also size of square head.

Generally Stay-Bolt Taps are wanted with 12 thread to the inch.

## LIGHTNING TAPER REAMERS FOR BRACE



B1405

Size....in.	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$	1	$1\frac{1}{8}$
Price ..ea.	.45	.50	.55	.60	.70	.80	.90	1.05	1.20	1.40	1.60	1.80	2.00	2.25

Per Set, in Case No. 1, 9 sizes. $\frac{1}{4}$ inch to $\frac{3}{4}$ inch.....	7.25
" " " " " 2, 5 " $\frac{1}{4}$ " " $\frac{1}{8}$ " .....	3.00

## BURRING REAMERS WITH BIT BRACE SHANK



B1406

Square Shank, diameter at point, $\frac{7}{16}$ inches; at largest part, $1\frac{1}{4}$ inches; length of fluting, $1\frac{3}{4}$ inches.....each	1.25
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With  $\frac{1}{2}$  inch Round Shank same price as above.



## VALVE FILE

Fig. B1408

For Repairing the Seat of Flat Seat Valves.

Used With an Ordinary Brace

Set No. 1, $\frac{3}{8}$ in. to 1 in. 4 sizes	6.00
" " 2, $\frac{3}{4}$ " to 2 " 5 "	8.00
" " 3, $\frac{3}{8}$ " to 2 " 7 "	10.00
" " 4, $\frac{3}{8}$ " to 3 " 9 "	15.00



TAPER SHANK TWIST DRILLS



B1415

Price also applies to Straight Shank Drills, of same length as below.

Diameter Inches	Price Each	Length Over All Inches	Diameter Inches	Price Each	Length Over All Inches	Diameter Inches	Price Each	Length Over All Inches
1/8	.45	5 1/8	3/8	2.00	9 7/8	1 25/64	5.40	14 5/8
3/16	.45	5 3/8	1/2	2.00	9 7/8	1 13/32	5.40	14 5/8
1/4	.50	5 3/4	5/8	2.15	10	1 31/32	5.60	14 3/4
5/16	.50	5 3/4	3/4	2.15	10	1 63/64	5.60	14 3/4
3/8	.55	5 1/2	7/8	2.30	10 1/4	1 15/16	5.80	14 7/8
7/16	.55	5 7/8	1	2.30	10 1/4	1 15/32	5.80	14 7/8
1/2	.60	6 1/8	1 1/8	2.45	10 1/2	1 31/64	6.00	15
5/8	.60	6 1/8	1 1/4	2.45	10 1/2	1 63/64	6.00	15
3/4	.65	6 1/4	1 3/8	2.60	10 5/8	1 17/32	6.30	15 1/8
7/8	.65	6 1/4	1 1/2	2.60	10 5/8	1 35/64	6.30	15 1/8
1	.70	6 3/8	1 5/8	2.75	10 3/4	1 67/64	6.60	15 1/4
1 1/8	.70	6 3/8	1 3/4	2.75	10 3/4	1 13/16	6.60	15 1/4
1 1/4	.75	6 1/2	1 7/8	2.90	10 7/8	1 27/64	6.90	15 3/8
1 1/2	.75	6 1/2	2	2.90	10 7/8	1 49/64	6.90	15 3/8
1 3/4	.80	6 3/4	2 1/8	3.00	11	1 39/64	7.20	15 1/2
1 5/8	.80	6 3/4	2 1/4	3.00	11	1 63/64	7.20	15 1/2
1 7/8	.85	7	2 3/8	3.20	11 1/8	1 13/8	7.50	15 5/8
2	.85	7	2 1/2	3.20	11 1/8	1 21/32	7.50	15 5/8
2 1/8	.90	7 1/4	2 5/8	3.40	11 1/4	1 33/32	7.80	15 3/4
2 1/4	.90	7 1/4	2 3/4	3.40	11 1/4	1 65/64	7.80	15 3/4
2 3/8	.95	7 1/2	2 7/8	3.60	11 1/2	1 11/16	8.10	15 3/4
2 1/2	.95	7 1/2	3	3.60	11 1/2	1 45/64	8.10	15 7/8
2 5/8	1.00	7 3/4	3 1/8	3.80	11 3/4	1 67/64	8.40	16
2 3/4	1.00	7 3/4	3 1/4	3.80	11 3/4	1 23/32	8.40	16
2 7/8	1.10	8	3 3/8	4.00	11 7/8	1 37/64	8.60	16 1/8
3	1.10	8	3 1/2	4.00	11 7/8	1 69/64	8.60	16 1/8
3 1/8	1.20	8 1/4	3 5/8	4.20	12	1 25/32	8.80	16 1/4
3 1/4	1.20	8 1/4	3 3/4	4.20	12	1 51/64	8.80	16 1/4
3 3/8	1.30	8 1/2	4	4.40	12 1/8	1 13/16	9.00	16 3/8
3 1/2	1.30	8 1/2	4 1/8	4.40	12 1/8	1 53/64	9.00	16 3/8
3 5/8	1.40	8 3/4	4 1/4	4.50	12 1/2	1 27/32	9.20	16 3/8
3 3/4	1.40	8 3/4	4 3/8	4.50	12 1/2	1 32/32	9.20	16 1/2
3 7/8	1.50	9	4 1/2	4.65	12 1/2	1 55/64	9.20	16 1/2
4	1.50	9	4 3/4	4.65	14 1/8	1 67/64	9.35	16 1/2
4 1/8	1.50	9	4 5/8	4.80	14 1/8	1 29/32	9.35	16 1/2
4 1/4	1.60	9 1/4	4 3/4	4.80	14 1/4	1 59/64	9.50	16 1/2
4 3/8	1.60	9 1/4	4 7/8	4.80	14 1/4	1 63/64	9.50	16 1/2
4 1/2	1.70	9 1/2	5	5.00	14 3/8	1 15/16	9.65	16 1/2
4 3/4	1.70	9 1/2	5 1/8	5.00	14 3/8	1 61/64	9.65	16 1/2
4 5/8	1.85	9 3/4	5 1/4	5.20	14 1/2	1 31/32	9.80	16 1/2
4 3/2	1.85	9 3/4	5 3/8	5.20	14 1/2	1 63/64	9.80	16 1/2

Larger sizes quoted on application. Above Drills have taper shank as follows:

Diameters (inclusive) inches	1/8 to 37/64	19/32 to 29/32	59/64 to 1	1 17/64 to 2	2 1/64 to 3
Shank Taper .....	Number 1	2	3	4	5



ROUND SHANK DRILLS



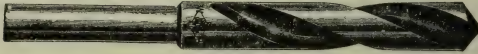
B1416

Diam.	Price Each	Length	Diam.	Price Each	Length	Diam.	Price Each	Length
$\frac{1}{8}$ inch	.55	$4\frac{7}{8}$ inch	$\frac{7}{16}$ inch	.90	6 inch	$\frac{3}{4}$ inch	1.25	6 inch
$\frac{5}{32}$ "	.58	5 "	$\frac{15}{32}$ "	.93	6 "	$\frac{25}{32}$ "	1.30	6 "
$\frac{3}{16}$ "	.60	6 "	$\frac{1}{2}$ "	.95	6 "	$\frac{13}{16}$ "	1.35	6 "
$\frac{7}{32}$ "	.65	6 "	$\frac{17}{32}$ "	.98	6 "	$\frac{15}{16}$ "	1.40	6 "
$\frac{1}{4}$ "	.70	6 "	$\frac{9}{16}$ "	1.00	6 "	$\frac{7}{8}$ "	1.45	6 "
$\frac{5}{16}$ "	.73	6 "	$\frac{19}{32}$ "	1.03	6 "	$\frac{29}{32}$ "	1.55	6 "
$\frac{3}{8}$ "	.75	6 "	$\frac{5}{8}$ "	1.05	6 "	$\frac{15}{16}$ "	1.60	6 "
$\frac{7}{16}$ "	.80	6 "	$\frac{11}{16}$ "	1.10	6 "	$\frac{11}{16}$ "	1.70	6 "
$\frac{1}{2}$ "	.85	6 "	$\frac{23}{32}$ "	1.15	6 "	$\frac{1}{2}$ "	1.80	6 "
$\frac{5}{8}$ "	.88	6 "	$\frac{25}{32}$ "	1.20	6 "			

The above drills have shanks  $2\frac{1}{4}$  inches long and about  $\frac{1}{4}$  inch in diameter.

ROUND 1-2 INCH SHANK TWIST DRILLS

Short Lengths



B1417

Diameter	Price Each	Length	Diameter	Price Each	Length
$\frac{1}{8}$ inch	.45	$5\frac{1}{8}$ inches	$\frac{7}{16}$ inch	.80	6 inches
$\frac{5}{32}$ "	.45	5 "	$\frac{15}{32}$ "	.83	6 "
$\frac{3}{16}$ "	.50	5 "	$\frac{1}{2}$ "	.85	6 "
$\frac{7}{32}$ "	.55	5 "	$\frac{17}{32}$ "	.88	6 "
$\frac{1}{4}$ "	.60	6 "	$\frac{9}{16}$ "	.90	6 "
$\frac{5}{16}$ "	.65	6 "	$\frac{19}{32}$ "	1.00	6 "
$\frac{3}{8}$ "	.70	6 "	$\frac{5}{8}$ "	1.05	6 "
$\frac{7}{16}$ "	.73	6 "	$\frac{11}{16}$ "	1.10	6 "
$\frac{1}{2}$ "	.75	6 "	$\frac{23}{32}$ "	1.15	6 "
$\frac{5}{8}$ "	.78	6 "	$\frac{25}{32}$ "	1.25	6 "

Drills larger than  $\frac{3}{4}$  inch with Shanks  $\frac{1}{2}$  inch in diameter, and Drills with Shanks about  $\frac{1}{4}$  inch in diameter, fitting Silver & Deming's Press Nos. 3 and 4, same price as for Coe's Drill Press. All Drills larger than  $\frac{7}{32}$  inch are 6 inches entire length. Shanks  $2\frac{1}{2}$  inches long.

SLEEVE No. 104 FOR MORSE TAPER SHANK



B1419

SOCKET FOR SQUARE SHANK DRILL



B1420

B1419. Number	1	1	1	2	2	3	4	5
Fitted to Socket.....number	2	3	4	3	4	4	5	6
Sleeve, No. 104.....each	1.80	1.80	3.00	2.40	3.00	3.00	4.40	10.00
B1420. Socket Number						2	3	4
Flat Drill Sockets.....each						1.75	1.75	2.25

# STRAIGHT SHANK TWIST DRILLS

## SHORT LENGTH



B1421

SHORT SET					LETTER SIZES				
Diamter Inches	Price per Dozen	Price Each	Decimals of 1 Inch	Length Over All Inches	Diamter Inches	Price per Doz.	Price Each	Decimals of 1 Inch	Length Over All Inches
$\frac{1}{16}$	1.00	.09	.0625	$2\frac{1}{2}$	A $\frac{15}{64}$	2.90	.26	.234	$3\frac{3}{16}$
$\frac{5}{64}$	1.10	.10	.0781	$2\frac{5}{8}$	B $\frac{3}{16}$	3.00	.27	.238	$3\frac{3}{16}$
$\frac{3}{32}$	1.20	.11	.0937	$2\frac{3}{4}$	C $\frac{1}{8}$	3.10	.28	.242	$3\frac{3}{16}$
$\frac{7}{64}$	1.30	.12	.1093	$2\frac{7}{8}$	D $\frac{1}{4}$	3.20	.29	.246	$3\frac{3}{16}$
$\frac{1}{8}$	1.45	.13	.1250	3	E $\frac{1}{4}$	3.30	.30	.250	$3\frac{3}{16}$
$\frac{9}{64}$	1.60	.15	.1406	$3\frac{1}{8}$	F $\frac{3}{8}$	3.40	.30	.257	$4\frac{1}{4}$
$\frac{5}{32}$	1.80	.16	.1562	$3\frac{1}{4}$	G $\frac{1}{2}$	3.50	.31	.261	$4\frac{1}{4}$
$\frac{11}{64}$	2.00	.18	.1718	$3\frac{3}{8}$	H $\frac{17}{64}$	3.60	.32	.266	$4\frac{1}{4}$
$\frac{3}{16}$	2.20	.20	.1875	$3\frac{1}{2}$	I $\frac{1}{2}$	3.70	.33	.272	$4\frac{1}{4}$
$\frac{13}{64}$	2.40	.21	.2031	$3\frac{5}{8}$	J $\frac{3}{4}$	3.80	.34	.277	$4\frac{1}{4}$
$\frac{7}{32}$	2.65	.23	.2187	$3\frac{3}{4}$	K $\frac{9}{32}$	3.90	.35	.281	$4\frac{1}{4}$
$\frac{15}{64}$	2.90	.26	.2343	$3\frac{7}{8}$	L $\frac{5}{16}$	4.00	.36	.290	$4\frac{1}{4}$
$\frac{1}{4}$	3.15	.28	.2500	4	M $\frac{19}{64}$	4.10	.36	.295	$4\frac{1}{4}$
$\frac{17}{64}$	3.40	.30	.2656	$4\frac{1}{8}$	N $\frac{3}{8}$	4.20	.37	.302	$4\frac{1}{4}$
$\frac{9}{32}$	3.65	.32	.2812	$4\frac{1}{4}$	O $\frac{5}{16}$	4.30	.38	.316	$4\frac{1}{4}$
$\frac{19}{64}$	3.90	.35	.2968	$4\frac{3}{8}$	P $\frac{21}{64}$	4.40	.39	.323	$4\frac{5}{8}$
$\frac{5}{16}$	4.20	.37	.3125	$4\frac{1}{2}$	Q $\frac{1}{2}$	4.60	.40	.332	$4\frac{3}{4}$
$\frac{21}{64}$	4.50	.40	.3281	$4\frac{5}{8}$	R $\frac{11}{32}$	4.80	.42	.339	$4\frac{3}{4}$
$\frac{11}{32}$	4.80	.42	.3437	$4\frac{3}{4}$	S $\frac{23}{64}$	5.00	.44	.348	$4\frac{7}{8}$
$\frac{23}{64}$	5.10	.45	.3593	$4\frac{7}{8}$	T $\frac{3}{8}$	5.20	.45	.358	$4\frac{7}{8}$
$\frac{3}{8}$	5.40	.48	.3750	5	U $\frac{1}{2}$	5.40	.47	.368	5
$\frac{25}{64}$	5.70	.50	.3906	$5\frac{1}{8}$	V $\frac{3}{8}$	5.60	.49	.377	5
$\frac{13}{32}$	6.00	.53	.4062	$5\frac{1}{4}$	W $\frac{25}{64}$	5.80	.51	.386	$5\frac{1}{8}$
$\frac{27}{64}$	6.40	.55	.4218	$5\frac{3}{8}$	X $\frac{1}{2}$	6.00	.53	.397	$5\frac{1}{4}$
$\frac{7}{16}$	6.80	.59	.4375	$5\frac{1}{2}$	Y $\frac{13}{32}$	6.40	.55	.404	$5\frac{1}{4}$
$\frac{29}{64}$	7.20	.63	.4531	$5\frac{5}{8}$	Z $\frac{3}{4}$	6.80	.59	.413	$5\frac{3}{8}$
$\frac{15}{32}$	7.50	.65	.4687	$5\frac{3}{4}$	.....	.....	.....	.....	.....
$\frac{31}{64}$	7.75	.67	.4843	$5\frac{7}{8}$	.....	.....	.....	.....	.....
$\frac{1}{2}$	8.00	.70	.5000	6	.....	.....	.....	.....	.....

For larger sizes, see B1415

# STEEL WIRE GAUGE SIZES

## B1422

Numbers by Gauge	Price per Doz.	Price Each.	Length In.	Numbers by Gauge.	Price per Doz.	Price Each.	Length In.
1 to 5	2.35	.22	4	31 to 35	1.40	.14	$2\frac{5}{8}$
6 to 10	2.25	.21	$3\frac{11}{16}$	36 to 40	1.25	.12	$2\frac{7}{16}$
11 to 15	2.10	.20	$3\frac{1}{2}$	41 to 45	1.10	.10	$2\frac{1}{4}$
16 to 20	1.95	.19	$3\frac{1}{4}$	46 to 60	.95	.09	$2\frac{1}{16}$ to $1\frac{3}{4}$
21 to 25	1.75	.17	$3\frac{1}{16}$	61 to 70	.90	.08	$1\frac{1}{2}$
26 to 30	1.55	.15	$2\frac{13}{16}$	71 to 80	1.00	.09	$1\frac{5}{16}$ to $1\frac{3}{4}$

## DRILLS WITH SQUARE SHANK, FITTING RATCHET



B1423

Diameter Inches	Price Each	Length Over All Inches	Diameter Inches	Price Each	Length Over All Inches	Diameter Inches	Price Each	Length Over All Inches	Diameter Inches	Price Each	Length Over All Inches
$\frac{1}{4}$	1.00	5	$\frac{5}{8}$	1.40	$6\frac{1}{2}$	1	2.55	$8\frac{1}{2}$	$1\frac{3}{8}$	4.20	9
$\frac{3}{8}$	1.05	5	$\frac{7}{8}$	1.45	$6\frac{1}{2}$	$1\frac{1}{32}$	2.70	$8\frac{1}{2}$	$1\frac{13}{32}$	4.35	9
$\frac{1}{2}$	1.10	5	$1\frac{1}{8}$	1.45	$6\frac{1}{2}$	$1\frac{1}{16}$	2.85	$8\frac{1}{2}$	$1\frac{1}{8}$	4.50	9
$\frac{5}{8}$	1.15	5	$1\frac{1}{4}$	1.50	$6\frac{1}{2}$	$1\frac{1}{8}$	3.00	$8\frac{1}{2}$	$1\frac{1}{4}$	4.65	9
$\frac{3}{4}$	1.20	6	$1\frac{3}{4}$	1.55	$6\frac{1}{2}$	$1\frac{1}{4}$	3.10	9	$1\frac{1}{2}$	4.80	9
$\frac{7}{8}$	1.25	$6\frac{1}{4}$	$2\frac{1}{8}$	1.65	$6\frac{1}{2}$	$1\frac{3}{8}$	3.25	9	$1\frac{5}{8}$	5.25	9
$1\frac{1}{8}$	1.25	$6\frac{1}{4}$	$2\frac{1}{4}$	1.75	7	$1\frac{7}{8}$	3.35	9	$1\frac{3}{4}$	5.75	9
$1\frac{1}{4}$	1.30	$6\frac{1}{4}$	$2\frac{3}{8}$	1.90	7	$1\frac{1}{2}$	3.50	9	$1\frac{7}{8}$	6.25	9
$1\frac{3}{8}$	1.30	$6\frac{1}{2}$	$2\frac{1}{2}$	2.05	$7\frac{1}{2}$	$1\frac{5}{8}$	3.65	9	$1\frac{3}{4}$	6.75	9
$1\frac{1}{2}$	1.35	$6\frac{1}{2}$	$2\frac{3}{4}$	2.20	$7\frac{1}{2}$	$1\frac{3}{4}$	3.75	9	$1\frac{13}{16}$	7.05	9
$1\frac{3}{4}$	1.35	$6\frac{1}{2}$	$2\frac{7}{8}$	2.30	8	$1\frac{7}{8}$	3.90	9	$1\frac{7}{8}$	7.35	9
$1\frac{7}{8}$	1.40	$6\frac{1}{2}$	$3\frac{1}{8}$	2.40	8	$1\frac{15}{16}$	4.05	9	$1\frac{15}{16}$	7.60	9
.....	.....	.....	.....	.....	.....	.....	.....	.....	2	7.85	9

No. 1 Shanks are  $\frac{3}{8} \times \frac{3}{8} \times 1\frac{1}{2}$  inches long. No. 2 Shanks are  $\frac{1}{2} \times \frac{3}{8} \times 1\frac{3}{4}$  inches long.  
When ordering, state number of Shank or manufacturer of Ratchet.

## BIT STOCK DRILL FOR METAL OR WOOD



B1424

For Use in Brace

Diameter Inches	Price Per Dozen	Price Each	Length Over All Inches	Diameter Inches	Price Per Dozen	Price Each	Length Over All Inches
$\frac{1}{16}$	1.50	.14	$3\frac{9}{16}$	$\frac{7}{16}$	8.80	.75	$6\frac{1}{2}$
$\frac{1}{8}$	1.65	.16	4	$\frac{1}{2}$	9.60	.82	$6\frac{3}{4}$
$\frac{1}{4}$	2.10	.20	4	$\frac{1}{2}$	10.30	.87	7
$\frac{3}{8}$	2.60	.24	$4\frac{1}{4}$	$\frac{3}{4}$	11.00	.92	$7\frac{1}{4}$
$\frac{1}{2}$	3.10	.29	$4\frac{1}{2}$	$\frac{1}{2}$	14.35	1.20	$7\frac{1}{2}$
$\frac{5}{8}$	3.60	.33	$4\frac{3}{4}$	$\frac{3}{4}$	16.15	1.35	$7\frac{1}{2}$
$\frac{3}{4}$	4.10	.38	5	$\frac{1}{2}$	17.95	1.50	$7\frac{1}{2}$
$\frac{7}{8}$	4.70	.43	$5\frac{1}{4}$	$\frac{1}{2}$	19.75	1.65	$7\frac{1}{2}$
$1\frac{1}{8}$	5.40	.48	$5\frac{1}{2}$	$\frac{1}{2}$	21.55	1.80	$7\frac{1}{2}$
$1\frac{1}{4}$	6.30	.54	$5\frac{3}{4}$	$\frac{1}{2}$	23.35	1.95	$7\frac{1}{2}$
$1\frac{3}{8}$	7.20	.62	6	$1\frac{1}{8}$	25.75	2.15	$7\frac{1}{4}$
$1\frac{1}{2}$	8.00	.68	$6\frac{1}{4}$	$1\frac{1}{8}$	28.15	2.35	$7\frac{1}{4}$

These Drills are carried in stock, with diameters varying by 64ths.

# DRILL PRESSES

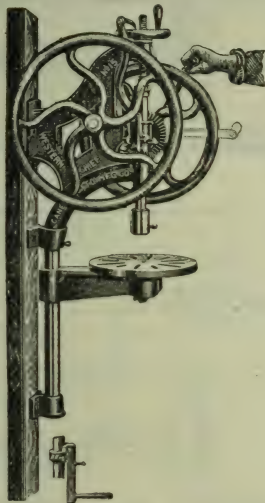
## ANGULAR AND RATCHET DRILLING MACHINE

No. 3

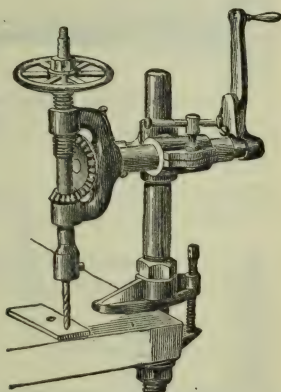
No. 15



B1430



B1431



B1432

No. 3

Drills to center of 14½-inch circle, and carries a bit up to 1-inch diameter. Takes bits ½ to ¾ shank. Weight, 100 pounds.

Price .....	each	10.00
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No. 15

Drills to center of 19-inch circle. Bores from 0 to 1½ inches. Takes bits ½ or ¾ shank. Run of spindle, 4½ inches. Weight, 175 pounds.

Price, Hand Power only.....	each	17.50
“ Both Hand and Pulley Power.....	“	19.50

No. 3 or No. 15 Presses can be furnished with tight and loose pulley power attachments for \$2.00 net extra.

When ordering, please state if wanted for ½ or ¾ shank bits.

## ANGULAR AND RATCHET DRILLING MACHINES

Number.....	1	*2
Size Hole Will Drill.....inches	5/8	1
Weight.....pounds	34	64
Price .....	20.00	25.00

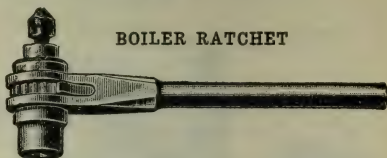


## PACKER RATCHETS



SLEEVE RATCHET

B1435



BOILER RATCHET

B1436

Number.....	1	2	3	4	5
Sleeve Ratchets.....each	10.50	13.50	16.00	19.00	23.00
Boiler "....."	9.00	10.50	....	....	....
Length of Handle.....inches	10	12	15	17	20

The Sleeve Ratchets can be furnished with Morse Taper Shank holes in socket.

KEYSTONE REVERSIBLE  
SQUARE SLEEVE

B1437

KEYSTONE REVERSIBLE  
BOILERMAKERS'

B1438

Handle.....inches	10	14	16	18	22	24	28
Square Sleeve or Boiler, ea.	5.00	5.75	6.50	7.25	7.50	7.75	8.25
Morse Taper, like B1437 "	5.25	6.00	6.75	7.50	7.75	8.00	8.50

KEYSTONE SQUARE SLEEVE AND BOILERMAKER'S  
RATCHETS

Handle.....inches	10, 14, 16	18, 22, 24, 28
Standard Square Taper.....	No. 1, $\frac{5}{8} \times \frac{3}{8} \times 1\frac{1}{2}$ in.	No. 2, $\frac{3}{4} \times 1\frac{1}{2} \times 1\frac{3}{4}$ in.

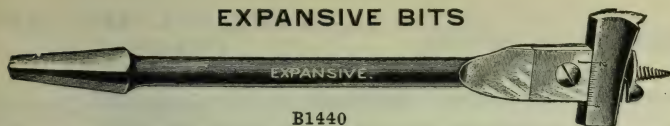
## KEYSTONE MORSE TAPER RATCHETS

Handle.....inches	10	14, 16	18, 22, 24, 28
Bore of Socket Taper.....number	2	3	4
For Drills up to inches....."	$\frac{3}{16}$	$1\frac{1}{4}$	2

SQUARE SHANK SLEEVES FOR MORSE TAPER RATCHETS  
To Hold Square Shank Drills

Number.....	1	2	3	4
Price.....each	1.00	1.25	1.25	1.50

**EXPANSIVE BITS**



B1440

No. 1...	Cutting $\frac{1}{2}$ to $1\frac{1}{2}$ inches	Price.....each	1.50
No. 2...	Cutting $\frac{7}{8}$ to 3 inches	Price.....each	2.20

**EXTRA CUTTERS FOR EXPANSIVE BITS**

Number.....	1	2	3	4	5	6
For Bit Number...	1	1	2	2	2	2
Size..... inches	$\frac{1}{2}$ to $\frac{7}{8}$	$\frac{7}{8}$ to $1\frac{1}{2}$	$\frac{7}{8}$ to $1\frac{3}{4}$	$1\frac{3}{4}$ to 3	3 to 4	4 to 5
Price.....per doz.	3.00	3.75	5.25	6.60	9.00	12.00

**BRACES**



B1441

8 inch Sweep, each.....	.65	10 inch Sweep, each.....	.70
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**RATCHET BRACES**

8 inch Sweep, each.....	1.75	10 inch Sweep, each.....	2.00
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**HAND DRILL**



B1442

Each, \$2.50.

**BREAST DRILL**



B1443

Each, \$5.00.

**CHAIN DRILLER**

For Use With Common or Ratchet Brace



B1444

No. 1, \$2.00.

No. 2, \$2.50.

No. 1 is for Bit Stock Drills.

No. 2 is for drills having  $\frac{1}{2}$  in. round shank.

ADJUSTABLE FRAME



ADJUSTABLE HACK SAW  
FRAME

B1450

For 8 to 12 inch blades, each, \$1.00.

HACK SAW BLADES



B1451

Price List of Hard and Flexible Back Blades

Length.....inches	6	7	8	9	10	12
Price.....per dozen	.55	.60	.65	.70	.85	1.05

POWER HACK SAW BLADES

Inches.....	12x $\frac{5}{8}$	12x $\frac{3}{4}$	14x $\frac{3}{4}$	16x $\frac{3}{4}$
Atkins.....dozen	1.05	1.50	1.67	2 17

COMPASS SAW

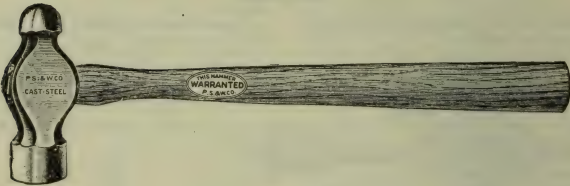
B1452



Inch.....	10	12	14	16
Each.....	.45	.50	.55	.60

MACHINIST HAMMER

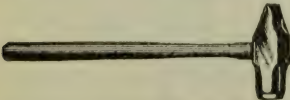
Ball Pein



B1455

Price List, Ball, Cross or Straight Pein

Number.....	00	0	1	2	3	4	5	6	7	8
Per dozen.....	12.00	12.50	13.50	14.50	15.50	16.50	17.50	19.00	20.50	22.00
Wiegth.....each	12 oz.	1 lb	1 $\frac{1}{4}$ lb	1 $\frac{1}{2}$ lb	1 $\frac{3}{4}$ lb	2 lb	2 $\frac{1}{4}$ lb	2 $\frac{1}{2}$ lb	2 $\frac{3}{4}$ lb	3 lb

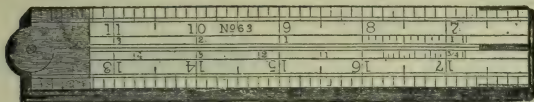


ENGINEER'S HAMMER

B1456

Number.....	0	1	2	3	4	5	6
Price.....per dozen	12.00	13.00	14.00	15.00	16.00	17.00	19.00
Weight.....each	1 lb. 2 oz.	1 lb. 10 oz.	2 lb.	2 $\frac{1}{2}$ lb.	3 lb.	3 $\frac{1}{2}$ lb.	4 $\frac{1}{2}$ lb.

# BOXWOOD RULES

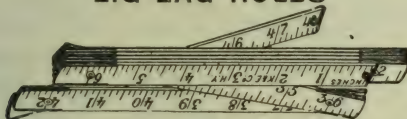


B1458

No. 84. Half Bound, 8ths, 10ths, 12ths, and 16ths of inches, 1 inch wide.....	per dozen	6.50
No. 62. Full Bound, 8ths, 10th, 12ths, and 16ths of inches, 1 inch wide.....	"	8.00
No. 65½. One foot, full bound.....	"	5.50
No. 68, 8th and 16th of inch, 1 inch wide, 2 ft.....	"	2.50
" 69, " " " " " 1 ".....	"	1.75

Numbers 84, 62 and 65, two foot, are with drafting scales.

# ZIG ZAG RULES

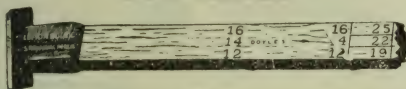


B1459

Made of flexible hard wood, with plated steel joints.

Length..... feet	2	3	4	5	6	8
Plain..... per dozen	2.00	3.00	4.00	5.00	6.00	8.00
White Enamel, brass joints..	2.50	3.75	5.00	6.25	7.50	10.00

# LOG RULES



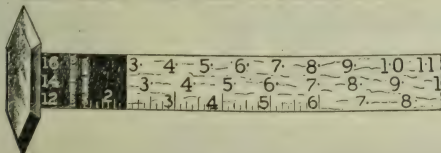
B1460

No. 14. Square Head Log Rule.....	per dozen	27.00
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Figured 48 inches, with 8-inch handle. Full length, 4 ft. 8 ins.

# SPECIAL BOARD RULES

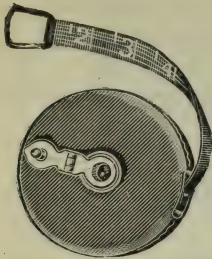
Hand-made from Selected Second Growth.



B1461

Square Head, 3-tier, 3½ foot.....	per dozen	27.50
Diamond Head, 3-tier, 3½ foot.....	"	30.00





## TAPE LINES

B1465

Size.....feet	25	30	50	75	100
Linen Line, Ass Skin Case, Brass Bound.....	5.00	5.50	8.00	10.00	12.50
Linen Metallic, in Hard Leather Case.....	25.20	.....	34.80	43.20	54.00
Steel Line, in Hard Leather Case.....	39.00	.....	48.00	63.00	81.00

## CALIPERS AND DIVIDERS

## IMPROVED FIRM JOINT CALIPER

Outside

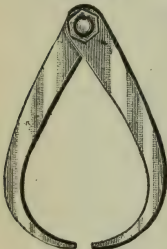
Inside

## LOCK JOINT CALIPER

Outside

Inside

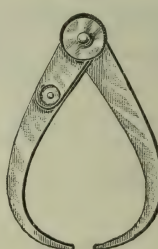
## WING DIVIDER



B1467



B1468



B1469



B1470

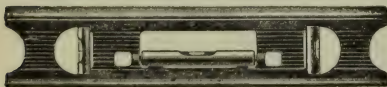


B1471

Size.....inches	3	4	5	6	8	10	12
Firm Joint Caliper.....each	.40	.50	.55	.65	.80	.90	1.00
Lock "....."	.....	.90	.95	1.00	1.25	1.50	1.75
Wing Dividers....."	.....	.....	.60	.65	.85	1.15	1.35

Size.....inches	14	15	16	18	20	24	30	36
Firm Joint Caliper.....each	1.50	.....	1.75	2.10	2.50	3.00	5.00	6.00
Lock "....."	2.00	.....	2.25	2.50	2.75	3.50	.....	.....
Wing Dividers....."	.....	2.30	.....	3.50	.....	.....	.....	.....

## METALLIC PLUMB LEVEL.



B1472

## POCKET LEVEL



B1474

WOODEN PLUMB  
AND LEVEL.

B1475

Prices on application.

## BELT TOOLS

### BELT PUNCHES



B1480

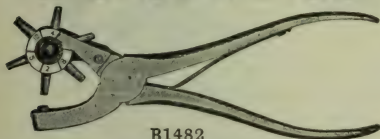
### ROUND BELT PUNCHES

Nos. 00, 0.....	per dozen	4.00
" 1, 2, 3, 4, 5.....	"	2.00
" 6, 7, 8, 9.....	"	2.25
" 10, 11, 12.....	"	2.50
" 13, 14, 15, 16.....	"	6.00

### OVAL BELT PUNCHES

Nos. 1, 2, 3, 4, 5.....	per dozen	4.00
" 6, 7, 8, 9.....	"	4.50
" 10, 11, 12.....	"	5.00
" 13, 14, 15, 16.....	"	12.00

### REVOLVING SPRING PUNCH



B1482

With Four Tubes.....	per doz.	15.00
With Six Tubes.....	"	17.50
Extra Tubes.....	"	2.50

### DRAW GAUGE



B1484

Patent Hollow Handle Draw Gauge.  
Each, \$1.25.

Patent Hollow Handle Improved Draw  
Gauge, each, \$1.50.

### WIRE LACE GROOVER

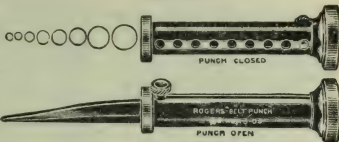


B1487

Price each, 50c.

### ROGERS BELT PUNCH

Cuts Holes  $\frac{1}{16}$  to  $\frac{3}{8}$  Inch  
Diameter



B1481

Price each, 75c.

### SPRING PUNCHES



B1483

Price each, 75c.

### WIRE LACE CUTTER



B1485

Price each, \$1.00.

### WIRE LACE MARKER



B1486

Price each, 25c.

### LOTHROP'S BELT AWL



B1488

Price each, 50c.

## BELT TOOLS AND GASKET CUTTERS

**AWL AND PLIERS COMBINED**  
For Use With Belt Studs



B1489

Each.....40c.

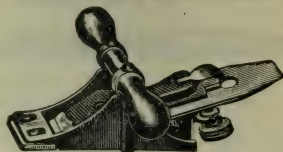
**RUBBER AND LEATHER CUTTER**  
For Use with Belt Studs



B1491

Large Cutter for Rubber Belt, each.....1.25  
Small Cutter for Leather Belt, each..... .90

**ADJUSTABLE BELT PLANE**



B1490

With 2 $\frac{3}{4}$ -inch Cutter, each, \$2.00

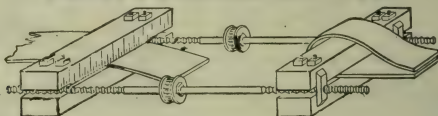
**LACE CUTTER**



B1492

Each.....50c.

**WESTON'S WOOD JAW BELT CLAMP**



B1495

Width of Belt .....	inches	12	18	24	30	36	55
Weston Clamp .....	each	11.50	14.00	16.00	19.00	24.00	37.00

**WASHER CUTTER**



B1496

Cut 6 inches, each....1.00  
Cut 8 " " ....1.25

**CENTURY GASKET AND WASHER CUTTER**

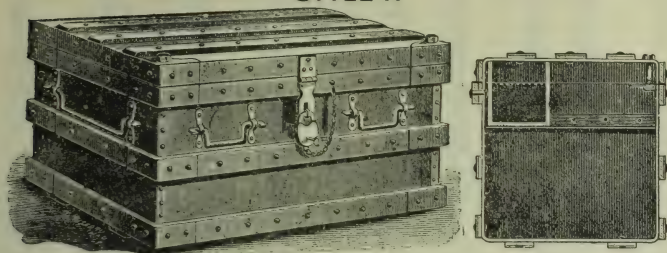


B1497

Cut 24 inches and smaller, each...3.00

## STEEL TOOL CHESTS

## STYLE A



B1499

Number.....	1	2	3	4
Style A, with 1 Drawer.....each	12.50	17.00	19.00	22.00
“ A, “ 2 Drawers.....“	13.00	18.00	20.25	23.50
“ B, “ 1 Tray.....“	13.00	18.50	20.50	23.00
“ B, “ 2 Trays.....“	13.50	19.00	21.00	24.00
“ D, “ 3 Drawers.....“	15.50	21.00	23.00	26.00
“ E, “ 2 “.....“	14.50	20.00	22.00	25.00
“ F, “ 1 Drawer.....“	13.50	19.00	21.00	24.00
“ C.....“	12.50	15.00	17.00	20.00

Price includes Brass Padlock.

Dimensions: Style "C," 11 inches deep, 12 inches wide, and length as follows: No. 1, 30 inches; No. 2, 36 inches; No. 3, 42 inches; No. 4, 48 inches; and has no drawers or divisions.

Sizes "A," "B," "D," "E," and "F." No. 1, 11 inches deep, 12 inches wide, 24 inches long; No. 2, 14 inches deep, 15 inches wide, 30 inches long; No. 3, 16 inches deep, 17 inches wide, and 36 inches long; No. 4, 19 inches deep, 20 inches wide, and 42 inches long.

Style "A" has narrow sliding drawers, as illustrated above.

Style "B" has two trays, with divisions in trays. These trays are exact width and length to drop into chest, and resting on flanges in end of chest they leave an open space in bottom.

Style "C" is without drawers or trays. Style "D" has three drawers with divisions in drawers; also a division lengthwise at bottom with a sliding cover over bottom division. Style "E" has two drawers with divisions in drawers, and divisions lengthwise of bottom.

Style "F" has one drawer with division in drawer and division lengthwise of bottom.

Sizes are inside measurements of body. Covers are two inches deep, and are not included in depth of chest.

Chests are not in stock, but are made to order.

They are made from  $\frac{1}{4}$ -inch sheet steel with malleable corner pieces.

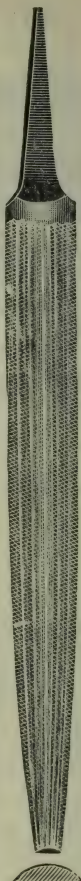




FLAT BASTARD  
B1500



MILL BASTARD  
B1501



HALF ROUND BASTARD  
B1502



SQUARE BASTARD  
B1503



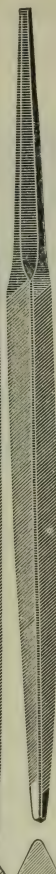
ROUND BASTARD  
B1504



BAND SAW, REGULAR  
BLUNT SINGLE CUT



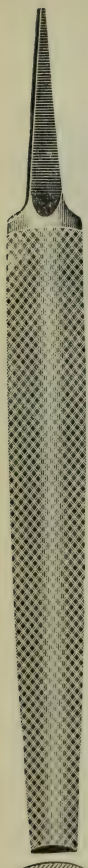
BAND SAW SLIM BLUNT  
SINGLE CUT



REGULAR TAPER  
B1507



SLIM TAPER  
B1508



HALF ROUND WOOD RASP  
B1510

FILES

PRICE LIST OF FILES AND RASPS

As Adopted by the File Manufacturers' Association of the United States, November 1, 1899

List of November 1, 1899

Price per Dozen

MILL AND ROUND			FLAT			SQUARE			HAND AND PILLAR			HALF ROUND AND THREE SQUARE			WARDING		
INCH	BASTARD		2d Cut	SMOOTH		INCH	BASTARD		2d Cut	SMOOTH	INCH	BASTARD	2d Cut	SMOOTH	BASTARD	2d Cut	SMOOTH
4	3.00	3.50	4.30	4.70	4.90	4	3.80	4.60	4.80	4.90	4	4.80	5.60	6.10	4.00	4.80	5.40
5	3.20	3.80	4.60	4.90	5.30	5	4.10	4.80	4.70	5.30	5	3.90	4.70	6.10	4.50	5.30	5.80
6	3.50	4.00	4.80	5.30	5.80	6	4.60	5.10	5.10	5.60	6	4.30	5.10	7.10	4.90	5.90	6.40
7	3.90	4.60	5.50	6.10	6.60	7	5.10	5.80	6.30	6.80	7	4.90	5.80	8.20	5.30	6.30	7.50
8	4.30	4.90	5.80	6.50	7.00	8	5.50	6.30	7.00	7.50	8	5.40	6.30	8.90	6.40	7.50	8.20
9	4.90	5.80	6.30	7.20	7.90	9	6.00	7.00	8.30	8.30	9	6.00	7.00	9.90	7.80	9.00	9.90
10	5.60	6.40	7.00	8.10	8.70	10	7.40	8.50	9.10	9.40	10	7.50	8.70	10.70	9.70	10.10	11.00
11	6.70	7.80	8.60	9.80	10.70	11	9.10	10.40	11.30	11.80	11	9.40	10.90	12.70	10.90	12.70	13.70
12	7.50	8.00	9.70	11.00	12.10	12	10.20	11.50	12.80	13.50	12	10.70	12.30	13.90	12.30	14.30	15.40
13	8.40	9.00	10.80	12.30	13.60	13	12.50	14.30	15.40	16.20	13	11.80	13.00	16.60	15.20	17.10	18.70
14	10.70	12.20	13.10	15.30	16.70	14	13.90	16.10	17.50	18.20	14	15.50	17.00	18.30	17.00	19.10	21.00
15	13.10	15.00	16.10	18.30	20.00	15	16.90	19.20	20.90	21.70	15	18.50	20.40	21.70			
16	14.70	16.80	17.80	20.10	22.30	16	18.70	21.20	23.30	24.20	16	20.10	22.80	24.20			
17	18.20	20.20	21.50	24.00	26.50	17	22.50	25.40	27.50	28.60	17	24.70	27.00	28.90			
18	20.20	22.70	23.90	26.80	29.20	18	25.10	28.20	30.40	31.50	18	27.50	29.90	32.00			
19	24.60	27.50	28.40	31.60	34.60	19	29.70	33.20	35.70	37.00	19	32.80	35.70	38.10			
20	27.40	30.70	31.50	35.30	38.30	20	32.80	36.70	39.30	41.60	20	37.50	39.40	42.30			
Mill Blunt, Dbl. Cut			Cant (Blunt) Dbl. Cut advance 2 in.			Square Blunt, advance.....1 in.			Slotting (Blt.) adv.....2 in.			Ginsaw, take Bastard price, adv.....2 in.			Stavesaw proved		
adv.....2 in.									Cotter Blunt or Taper, adv.....2 in.						6 inch..... 6.40		
Mill Dbl. Cut, adv.....1															7 "..... 7.40		
Mill Narrow Point, "adv.....1															8 "..... 8.10		
															9 "..... 9.70		
															10 "..... 10.70		
															12 "..... 15.40		

# SEF

MILL One Round Edge				MILL Two Round Edges			TAPERS		SLIM TAPERS		Bandsaw Blunt and Taper		INCH		PIT Saw		Cant Saw		Cr'ss Cut		Hook To'th Knife		In- serted Tooth, or Chis- el Tooth	
Bastard		2d Cut		Smooth		INCH		Double Cut		Single Cut		Double Cut		Reg- ular		Slim		Single Cut		Single Cut		Single Cut		
3.40	3.90	4.40	4.40	4.40	3	2.10	2.50	2.10	2.50	2.10	2.50	2.50	2.50	4	4.80	4.30	4.80	4.80	4.80	4.80	4.80	4.80	.....	
3.60	4.30	4.60	4.00	4.80	3½	2.10	2.50	2.10	2.50	2.10	2.50	2.50	2.50	5	5.40	4.70	5.40	5.40	5.40	5.40	5.40	5.40	.....	
3.80	4.50	5.10	4.40	5.00	4	2.20	2.90	2.20	2.90	2.20	2.60	2.60	2.60	6	6.10	5.40	6.10	6.10	6.10	6.10	6.10	6.10	.....	
4.40	5.20	5.50	4.90	5.80	4½	2.40	3.10	2.30	3.00	2.30	2.80	3.00	3.10	7	7.00	6.10	7.00	7.00	7.00	7.00	7.00	7.00	.....	
4.80	5.30	6.10	5.40	6.10	5	2.60	3.50	2.50	3.20	2.50	3.20	3.20	3.50	8	7.50	6.40	7.50	7.50	7.50	7.50	7.50	7.50	.....	
5.50	6.50	7.10	7.30	7.90	5½	3.00	4.00	2.90	3.50	2.90	3.50	4.00	3.50	9	8.50	7.80	8.50	8.50	8.50	8.50	8.50	8.50	.....	
6.30	7.20	7.90	7.00	8.00	6	3.40	4.70	3.10	3.90	3.10	3.90	4.70	3.90	10	9.10	8.10	9.10	9.10	9.10	9.10	9.10	9.10	.....	
7.50	8.80	9.60	8.40	9.80	7	4.30	5.60	3.80	4.50	3.80	4.50	5.60	4.50	11	10.70	10.40	10.70	10.70	10.70	10.70	10.70	10.70	.....	
8.40	9.70	10.60	9.40	10.80	8	5.40	6.70	4.50	5.30	4.50	5.30	6.70	5.30	12	11.80	11.40	11.80	11.80	11.80	11.80	11.80	11.80	.....	
10.60	12.00	13.20	11.80	13.40	9	6.60	8.10	5.40	6.30	5.40	6.30	8.10	6.30	Climax, adv. 2 in. on Hf. Rd. Bastard. Round Gulleting, take Pitsaw price.										
12.00	15.70	17.40	13.40	15.30	10	8.10	9.70	6.40	7.50	6.40	7.50	9.70	7.50	Round Gulleting, take Pitsaw price.										
14.70	16.90	18.10	16.40	18.80	10½	10.70	12.10	8.30	9.10	8.30	9.10	12.10	9.10	Patent Double-End with Handle										
16.50	18.90	20.10	18.40	21.00	12	12.50	14.70	9.50	11.00	9.50	11.00	14.70	11.00	7										
20.50	22.70	24.40	22.80	25.30	13	15.90	17.60	12.10	13.10	12.10	13.10	17.50	13.10	8										
22.70	25.50	27.50	25.30	28.40	14	18.20	20.50	13.50	15.40	13.50	15.40	20.60	15.40	9										
25.50	28.70	30.40	28.30	30.40	14½	20.50	22.60	15.40	17.50	15.40	17.50	22.60	17.50	3.50										
28.70	31.90	33.40	31.30	33.40	15	22.60	24.90	17.50	19.60	17.50	19.60	24.90	19.60	4.40										

Climax, adv. 2 in. on Hf. Rd. Bastard.  
Round Gulleting, take Pitsaw price.

**Patent: Double-Ender with Handle**

INCH	HORSE RASPS		FILE RASPS		INCH	WOOD FILES			WOOD RASPS			INCH	SHOE RASPS			INCH	KNIFE		
	Plain	Bev'd & 3/4 Rasp	Flat	Hf. Rnd.		Flat	Cabinet	Hf. Rnd.	Flat	Hf. Rnd.	Cabinet		Flat	Hf. Rnd.	Oval		Bastard	2d Cut	Smooth
6	.....	.....	7.40	8.10	6	4.30	6.10	8.10	7.40	8.10	10.10	6	8.10	9.30	4	5.40	6.10	6.40	
7	.....	.....	8.60	9.50	7	4.80	7.00	9.30	8.60	9.30	11.70	7	9.30	10.10	5	6.10	6.70	7.10	
8	.....	.....	9.40	10.10	8	5.30	7.50	10.10	9.40	10.10	12.80	8	10.10	12.20	6	6.90	7.50	7.90	
9	.....	.....	11.40	12.20	9	6.30	8.50	12.20	11.40	12.20	15.50	9	12.20	13.70	7	7.80	8.50	8.90	
10	9.40	10.70	12.80	13.70	10	7.00	9.10	13.70	12.80	13.70	17.50	10	13.70	16.80	8	8.50	9.10	9.50	
11	11.40	12.90	15.20	16.80	11	8.60	10.70	16.80	15.50	16.80	20.70	11	16.80	18.70	9	9.40	10.60	11.30	
12	12.80	14.40	16.80	18.70	12	9.70	11.80	18.70	17.50	18.70	22.80	12	18.70	22.40	10	10.10	11.50	12.30	
13	15.20	17.00	19.60	22.40	13	11.80	14.10	22.40	20.90	22.40	26.80	13	22.40	22.40	11	12.20	13.70	14.60	
14	17.60	20.30	23.10	24.80	14	13.30	15.50	24.80	23.20	24.80	29.60	14	24.80	24.80	12	13.70	15.20	16.10	
15	20.60	23.60	27.30	29.70	15	16.01	18.50	29.70	27.80	29.70	33.90	.....	.....	.....	13	16.30	17.90	19.20	
16	24.40	27.50	32.20	32.90	16	17.80	20.60	32.90	30.80	32.90	36.90	.....	.....	.....	14	18.20	19.90	21.20	
17	28.30	31.50	36.20	38.90	17	21.50	24.70	38.90	36.20	38.90	42.90	.....	.....	.....	.....	.....	.....	.....	
18	32.90	36.20	40.90	43.60	18	23.90	27.50	43.60	40.90	43.60	46.90	.....	.....	.....	.....	.....	.....	.....	
19	38.90	43.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	43.60	46.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
21	46.90	50.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	50.30	54.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	54.00	58.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	58.00	62.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
25	62.00	66.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	66.00	70.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	70.00	74.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	74.00	78.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	78.00	82.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
30	82.00	86.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
31	86.00	90.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
32	90.00	94.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
33	94.00	98.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
34	98.00	102.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
35	102.00	106.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
36	106.00	110.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
37	110.00	114.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
38	114.00	118.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
39	118.00	122.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
40	122.00	126.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
41	126.00	130.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
42	130.00	134.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
43	134.00	138.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
44	138.00	142.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
45	142.00	146.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
46	146.00	150.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
47	150.00	154.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
48	154.00	158.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
49	158.00	162.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
50	162.00	166.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
51	166.00	170.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
52	170.00	174.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
53	174.00	178.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
54	178.00	182.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
55	182.00	186.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
56	186.00	190.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
57	190.00	194.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
58	194.00	198.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
59	198.00	202.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
60	202.00	206.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
61	206.00	210.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
62	210.00	214.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
63	214.00	218.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
64	218.00	222.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
65	222.00	226.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
66	226.00	230.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
67	230.00	234.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
68	234.00	238.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
69	238.00	242.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
70	242.00	246.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
71	246.00	250.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
72	250.00	254.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
73	254.00	258.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
74	258.00	262.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
75	262.00	266.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
76	266.00	270.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
77	270.00	274.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
78	274.00	278.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
79	278.00	282.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
80	282.00	286.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
81	286.00	290.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
82	290.00	294.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
83	294.00	298.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
84	298.00	302.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
85	302.00	306.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
86	306.00	310.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
87	310.00	314.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
88	314.00	318.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
89	318.00	322.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
90	322.00	326.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
91	326.00	330.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
92	330.00	334.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
93	334.00	338.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
94	338.00	342.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
95	342.00	346.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
96	346.00	350.00																	

Sizes below 4 inches, not extended, take 4-inch price.

Half inches not specified, take next higher full inch price.

Dead Smooth, double the price of Bastard Cut.

One Round Edge, advance  $12\frac{1}{2}$  per cent.  
All lengths above those listed, advance 2

All lengths above those listed, advance 20  
Cuts not specified

not specimens, shade from regular stands, advance one inch on respective dates and not over six.

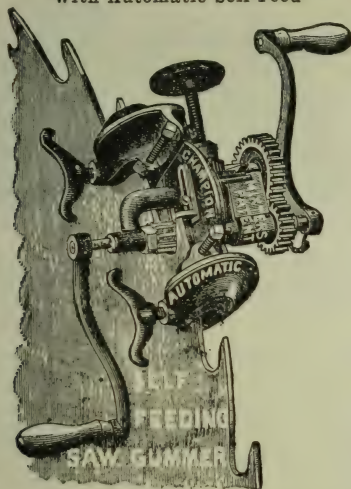
Blunt Files not specified, advance one inch on respective kinds and cuts. Single or Float Cut not specified, on regular shapes take Double Cut price. Ball and Ovalings Balled, advance two inches on respective kinds and cuts.

Two Round Elges, advance 25 per cent.



# No. 1 MIXTER PAT. CHAMPION SAW GUMMER

With Automatic Self-Feed



B1515

No. 1. Automatic Self-Feeding Gummer, including three cutters (usual size  $\frac{3}{4}$ ,  $\frac{1}{2}$ , and 1 inch), grinder, and wrench ..... 39.00  
Extra Arbors for  $\frac{3}{4}$ ,  $\frac{1}{2}$ , and  $\frac{3}{8}$  inch cutter.....net 2.00

It is adjustable to all kinds of saws from largest circular to the smallest in general use, also mill and crosscut saws.



B1516

## MIXTER GUMMER CUTTERS

For Mixer's, Standard, I. X. L. Boss and Disston's Gummers. When ordering give make of Gummer.

Size.....inch	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$
Each.....	.50	.50	.50	.60	.70	.80	.90	1.00	1.25	1.75

## MIXTER'S DUPLEX SWAGES



B1517

No. 3 Duplex Swage, largest size, for saws from 5 to 10 gauge.....	7.00
No. 2 Duplex Swage, medium size, for saws of from 8 to 12 gauge.....	6.00
No. 1 Duplex Swage, for all thinner gauges.....	5.00
No. 0 Duplex Swage, for small thin saws.....	4.00





## SAND PAPER

Sheets 9x11 inches, 24 Sheets in a Package, Half Ream in a Bundle, and Rolls

Number.....	00, 0 and ½	1	1½	2	2½	3 Ass't
B. A. & Co. list, Per Ream.....	6.25	6.75	7.25	7.75	8.25	9.50
Barton .. .. .	4.25	4.50	5.00	5.25	5.50	6.00
B. A. & Co. .. .. . Roll, 24 in. (50 yds. long)	6.75	7.25	7.75	8.50	9.25	10.25
.. .. . 30 .. .. .	9.00	9.50	10.00	10.50	11.00	12.00
.. .. . 36 .. .. .	11.00	11.50	12.00	12.50	13.25	14.25
.. .. . 40 .. .. .	13.25	13.75	14.25	14.75	15.50	16.75
.. .. . 42 .. .. .	14.25	14.75	15.25	15.75	16.50	18.00
.. .. . 48 .. .. .	16.50	18.00	18.50	19.25	20.00	22.00
Barton .. .. . 24 .. .. .	4.50	4.75	5.25	5.75	6.25	6.75
.. .. . 30 .. .. .	6.50	6.50	7.00	7.50	8.00	9.00
.. .. . 36 .. .. .	8.00	8.00	8.25	8.50	9.00	10.00
.. .. . 40 .. .. .	10.00	10.00	10.25	10.50	11.00	12.00
Cloth .. .. . 14 .. .. .	8.00	8.50	9.50	10.00	10.50	11.00

## EMERY CLOTH AND EMERY PAPER

BAEDER, ADAMSON &amp; CO.'S AND BARTON'S LIST

Sheets 9x11 Inches, One Quire of 24 Sheets in a Package and Rolls

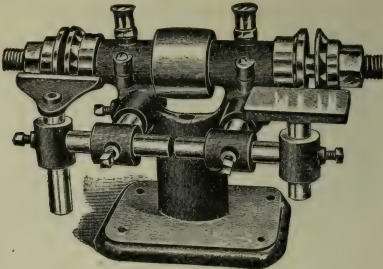
Number.....	Crocus and P. F.	00, 0 and ½	1	1½	2	2½	3
Cloth, B. A. & Co. list, Per Ream.....	26.50	26.50	28.50	29.75	30.75	33.00	35.25
.. .. . Barton .. .. .	18.00	18.00	20.00	21.00	22.00	23.00	24.00
Paper, B. A. & Co. .. .. .	9.25	11.00	11.50	12.25	14.00	16.50	
.. .. . Barton .. .. .	6.00	7.00	7.50	8.00	9.00	10.50	
Cloth, B. A. & Co. 9 in. wide, Per Roll .. .. .	9.25	10.50	11.00	11.50	12.00	13.25	
.. .. . 18 .. .. .	18.50	21.00	22.00	23.00	24.00	26.50	
.. .. . Barton 9 .. .. .	6.25	6.25	7.00	7.25	7.50	8.00	8.25
.. .. . 18 .. .. .	12.50	12.50	14.00	14.50	15.00	16.00	16.50
Paper, B. A. & Co. 24 .. .. . Per 50 y's .. .. .	10.00	11.50	12.00	12.50	14.25	17.50	
.. .. . Bartons, 24 .. .. .	7.00	7.00	7.50	8.00	8.50	10.00	12.00

## GARNETT PAPER AND CLOTH

In Sheets 9x11 Inches, Half Ream in Bundle and 50 Yard Rolls

Number.....	00, 0 and ½	1	1½	2	2½	3
B. A. & Co. list, Paper Per Ream.....	6.50	7.00	7.50	8.00	8.50	9.75
Barton .. .. .	5.50	6.00	6.50	7.00	7.50	8.00
B. A. & Co. .. .. . Roll, 24 in. ....	7.50	7.75	8.00	8.50	9.25	10.25
.. .. . 30 .. .. .	9.75	10.25	10.75	11.25	12.00	13.00
.. .. . 36 .. .. .	12.00	12.50	13.00	13.50	14.00	15.25
.. .. . 40 .. .. .	14.00	14.50	15.25	15.75	16.25	17.25
.. .. . 42 .. .. .	16.25	16.75	17.25	17.75	18.25	20.00
.. .. . 48 .. .. .	20.00	21.00	21.50	22.00	23.75	27.00
Barton .. .. . 24 .. .. .	7.00	7.75	8.00	8.50	9.00	9.50
.. .. . 30 .. .. .	9.00	10.25	10.75	11.25	12.00	12.50
.. .. . 36 .. .. .	11.50	12.50	13.00	13.50	14.00	14.50
.. .. . 40 .. .. .	13.50	14.50	15.00	15.50	16.00	16.50
.. .. . 42 .. .. .	15.50	16.50	17.00	17.50	18.00	19.00
.. .. . 48 .. .. .	19.00	19.50	20.50	22.00	23.00	25.00
Cloth, .. .. . 14 .. .. .	13.00	13.00	13.50	14.00	15.00	15.50

EMERY GRINDERS



No. 2 B1528

	No. 2 For 1½x10 Wheels Price, 10.00	No. 3 For 3x12 Wheels Price, 15.00	No. 4 For 2x16 Wheels Price, 20.00
Arbor to Table .....	6 ins.	8 ins.	9½ ins.
Diameter of Base.....	5¼x6¼ "	9⅛x6 "	13x9 "
Length of Arbor.....	14 "	18 "	25 "
Diameter between Collars.....	¾ "	1 "	1¼ "
Diameter of Collars.....	2¼ "	3½ "	4 "
Bearings.....	7⁄8x2 "	3x1⅛ "	5x1⅝ "
Pulley.....	2¼x2 "	4x3 "	4¾x4 "
Distance between Wheels.....	7¾ "	10 "	....
Weight.....	22 lbs.	42 lbs.	85 lbs.
Size of Box.....	8x16x9 ins.	12x20x8 ins.	23x14x11 ins

BLACKSMITHS' TONGS



CURVED LIP  
FLUTED JAW  
SOLID STEEL

B1530



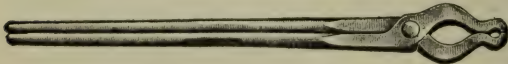
ROUND JAW

B1531



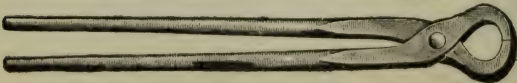
SINGLE PICK-UP

B1532



RIVET

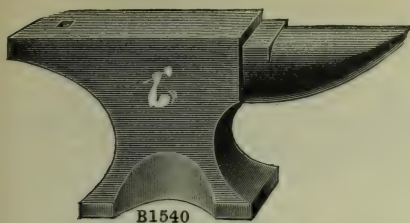
B1533



BOLT

B1534

When ordering, state length desired.  
Price per pound, 25c.



B1540

## ANVILS

### PETER WRIGHT ANVILS

Steel Faced Wrought Anvils  
Steel Face Cast Anvils

Prices quoted on application. State approximate size wanted, and what kind, and for what purpose.

## BLACKSMITHS' TOOLS.

State Size Shank Wanted

FLATTER



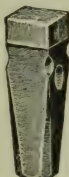
B1541

HARDIE



B1542

SET HAMMER

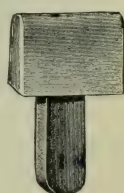


B1543

TOP FULLER BOTTOM FULLER



B1544



B1545

TOP SWAGE



B1546

BOTTOM SWAGE



B1547

CUTTING CHISELS

Hot



B1548

Cold



B1549

All sizes. Per pound, \$0.40.

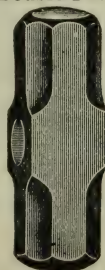
Cross Pein



B1550

## BLACKSMITHS' SLEDGES

Double Faced



B1551

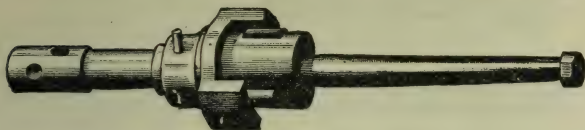
5 pounds or over, per pound, \$0.30.

Sledges can also be furnished with straight pein instead of cross pein.





# ROLLER TUBE EXPANDER



B1560

Boiler Tube Size and Price List

Diameter.....inches	1, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$ , 1 $\frac{3}{4}$ and 2		2 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	3	3 $\frac{1}{4}$
Price.....each	10.00		12.00	14.00	16.00	18.00	20.00
Diameter.....inches	3 $\frac{1}{2}$	3 $\frac{3}{4}$	4	4 $\frac{1}{4}$	4 $\frac{1}{2}$	5	6
Price.....each	23.00	25.00	30.00	35.00	40.00	50.00	60.00

# IDEAL SELF-FEED ROLLER TUBE EXPANDER

Worked by Hand or Reversible Air Drill Without Any Change



( WIEDEKE PATENT TRADE MARK REGISTERED )

B1561

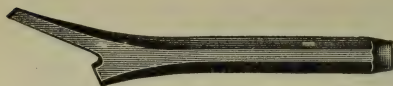
Diameter.....inches	1, 1 $\frac{1}{4}$ and 1 $\frac{1}{2}$		1 $\frac{3}{4}$ and 2		2 $\frac{1}{4}$	2 $\frac{1}{2}$
Price.....complete	10.00		12 00		13.00	14.00
Diameter.....inches	2 $\frac{3}{4}$	3	3 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	4
Price.....complete	16.00	18.00	19.00	20.00	21.00	22.00

# SPRING TUBE EXPANDER



B1562

Size....in.	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	3	3 $\frac{1}{4}$	3 $\frac{1}{2}$	4
Price . .each	11.00	11.00	11.00	11.00	12.00	13.00	15.00	18.00	22.00	26.00	30.00	33.00



B1563

**BEADING TOOLS**

Price each, \$1.50.



B1564

**COLD CHISELS**

Number.....	1	2	3	4	5	6
Size of Steel.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Price.....each	.30	.35	.45	.60	.70	.90

**ROUND NOSE B1565**Each:  $\frac{5}{8}$  in., 75c.;  $\frac{3}{4}$  in., 85c.**DIAMOND POINT B1566**Each:  $\frac{5}{8}$  in., 75c.;  $\frac{3}{4}$  in., 85c.;  
 $\frac{7}{8}$  in., 95c.**CAPE CHISEL B1567**Each:  $\frac{5}{8}$  in., 75c.;  $\frac{3}{4}$  in., 85c.**WOOD CHISEL B1568**

Each: Blade 1 in., 80c.; 2 in., \$1.50.

**HEAVY YARNING IRON B1569**Each: Point  $\frac{1}{16}$  in. or  $\frac{1}{8}$  in. thick, 85c.**HEAVY CALKING IRON B1570**

Number.....	1	2	3	4	5	6	7	8
Size.....inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Each.....	.70	.70	.75	.75	.80	.80	.90	.90

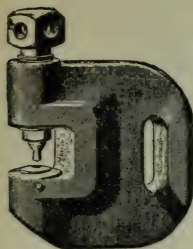
Mueller Calking Iron is  $6\frac{3}{4}$  long of  $\frac{7}{8}$  Octagon Steel.**FLOOR CHISEL B1571**

3-inch Blade each, \$1.80. 4-inch Blade each, \$2.50.

**HOLLOW BRICK DRILL B1572**

Length, and Size Hole .....	inches	12 x $\frac{1}{4}$	12 x $\frac{5}{8}$	14 x $\frac{3}{4}$	13 x 1	18 x $1\frac{1}{4}$
Each.....		1 00	1.20	1.50	1.70	2.00

"Star" Drills (not illustrated) about 25% higher list.



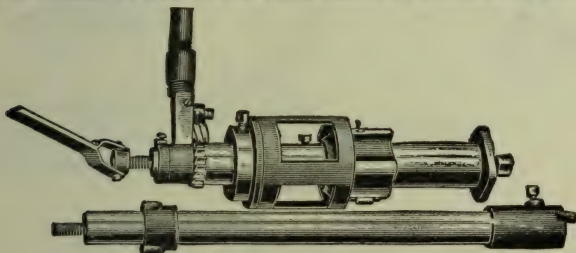
B1576

# STEEL SCREW PUNCH

No.	Punches Hole Inches	In Iron Inches	From Edge of Sheet Inches	Price Each		
A	$\frac{5}{16}$	$1\frac{1}{4}$	$1\frac{1}{2}$	20.00		
C	$1\frac{1}{2}$	$1\frac{1}{16}$	$1\frac{1}{2}$	30.00		
D	$\frac{3}{4}$	$1\frac{1}{2}$	2	40.00		
E	$\frac{3}{4}$	$3\frac{1}{4}$	$2\frac{1}{2}$	60.00		
G	$\frac{3}{4}$	$\frac{3}{4}$	4	80.00		
No.....		A	C	D	E	G
Weight.....pounds		15	27	40	62	110
Extra Punches and Dies.....per pair		3.50	4.00	4.00	5.00	5.00

# BOILER TUBE CUTTERS

For Cutting off New or Old Tubes Inside or Outside the Head



B1577

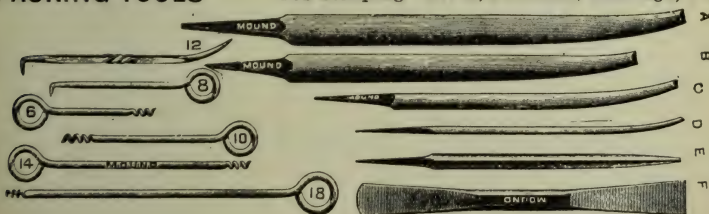
Diam. of Tube...Inches	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	$3\frac{1}{4}$	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Price ..... Each	14.00	14.00	14.00	16.00	20.00	20.00	22.00	22.00	30.00	32.00	32.00

Smoke Box Extension 2 to  $2\frac{3}{4}$  inch, \$2.50; 3 to  $4\frac{1}{4}$  inch, \$3.00.

## ENGINEERS' PACKING TOOLS

## SCRAPING TOOLS

For Scraping Valves, Journals, Bearings, etc.



B1578

B1579

Price, per set as illustrated, made of $\frac{3}{16}$ , $\frac{1}{4}$ and $\frac{5}{16}$ inch steel, 4, 8, 10, 12, 14, 16, 18, 20, and 24 inches long, Set of 6 pieces.....	2.25
Set of 4 pieces.....	1.50

Price, per set of six scrapers, tempered and polished, packed in neat oak case....	2.50
Special Hollow Ground .....	3.50

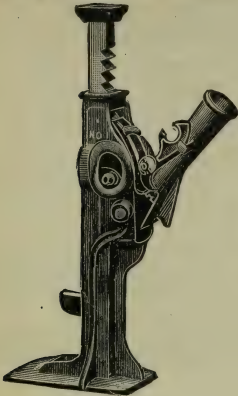


No. 1 TRACK OR TRIP JACK

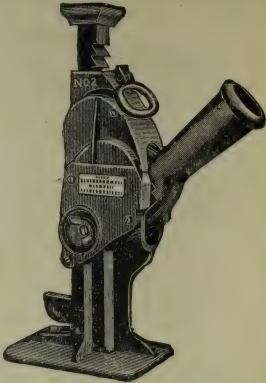
No. 2 AUTOMATIC LOWERING JACK

BARRETT JACKS

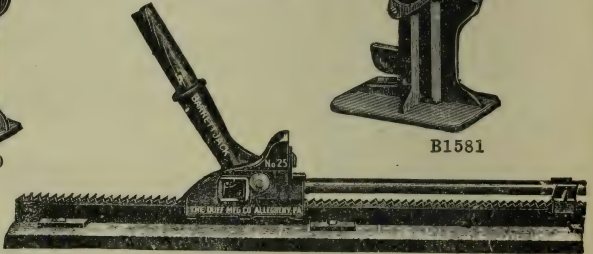
HORIZONTAL PIPE FORCING JACK



B1580



B1581



B1582

Capacity, 15 tons; Total Length, 8½ feet; Travel of Cage, 7½ feet; Weight 185 pounds; Price each, \$40.00

This jack forces pipe ¼ inch to 4 inch sizes, horizontally through the ground, for services running under roadways or walks.

B1580 AND B1581

Number	Height With Bar Down Inches	Raise of Bar Inches	Lifting Capacity Tons	Size of Bar Inches	Weight Pounds	Price Each
++00	12	6	1	¾ x 1 13	81 1	5.00
++* 1	24	13 1	10	1 1 x 1 13	62	18.00
+ 2	21	10	10	1 3 x 1 1 2	65	25.00
+ 3	26 1	15	12	1 3 x 1 1 3	85	30.00
+ 4	22	10	15	2 x 2	100	35.00
+ 5	28	15	15	2 x 2	115	40.00
* 6	31	19	15	1 3 x 1 1 3	105	32.00
+ 8	11	5	10	1 3 x 1 1 2	48	22.00
+10	24 1	14	10	1 1 x 1 1 2	66	25.00
*12	17 1	8	10	1 3 x 1 1 2	50	17.00
**17	24	13 1	10	1 1 x 1 1 2	63	18.00
++18	21	10	10	1 1 x 1 1 3	68	25.00
++19	28	17 1	15	2 x 2	102	35.00
**20	31	19	15	1 3 x 1 1 3	106	32.00
+32	20 1	10	10	1 3 x 1 1 2	70	25.00
+50	16	8	5	1 1 x 1 1 4	33	16.00

+Double Acting Automatic Lowering Jacks.

++Single Acting Automatic Lowering Jacks.

\*Double Acting Trip Jacks. \*\*Single Acting Trip Jacks.

++Double Act. Automobile Jack. †Automatic Lowering and Trip Jack combined, No. 10 only.



## JACK SCREWS

## CAST-IRON

B1583

When ordering give diameter of screw and height of stand.

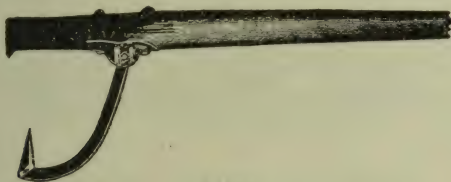
Height of Stand.....inches	6	8	10	12	14	16	18	20	24
1 1/2-inch Screw.....each	3.10	3.40	3.80	4.20	.....	.....	.....	.....	.....
1 1/2 " " " " " " " "	3.75	4.25	4.75	5.25	6.00	.....	.....	.....	.....
1 3/4 " " " " " " " "	4.50	5.00	5.75	6.25	6.75	7.50	.....	.....	.....
2 " " " " " " " "	5.25	6.00	6.75	7.50	8.25	9.25	10.25	11.50	.....
2 1/2 " " " " " " " "	.....	8.75	9.75	10.75	12.00	13.25	14.50	15.75	18.25
3 " " " " " " " "	.....	.....	.....	.....	19.50	20.75	22.00	23.25	25.75

For height over all closed, add to height of stand 1¼-inch screw 2¼ inches; 1½-inch screw 2½ inches; 1¾-inch screw 2¾ inches; 2-inch screw 3¼ inches; 2½-inch screw 4 inches; 3-inch screw 4½ inches.

Capacity:  $1\frac{1}{4}$ -inch 10 tons;  $1\frac{1}{2}$ -inch 12 tons;  $1\frac{3}{4}$ -inch 16 tons; 2-inch 20 tons;  $2\frac{1}{2}$ -inch 28 tons; 3-inch 36 tons.

Levers, if wanted, are extra.

## CANT HOOKS



B1584

With Selected Hickory Handles, Round or Duck Bill Hooks.

No.	Sizes	Per Dozen
246	2½ in. x 4, 4½, 5 or 5½ feet handles.....	25.00
247	2¾ " x 4, 4½, 5 " 5½ " " .....	28.25
248	3 " x 4, 4½, 5 " 5½ " " .....	31.25

## EXTRA HICKORY HANDLES

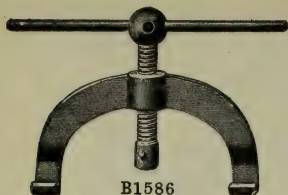
Size.....	2½ in. x 4½ ft.	5 ft.	5½ ft.	6 ft.
Per Dozen.....	4.00	4.30	4.70	5.10

## PINCH POINT CROW BARS



B1585

Solid Steel, 10 to 40 lbs. sizes, per lb. 12 cents. Under 10 lbs. or over 40 lbs., per lb. 18 cents.



## SCREW RAIL BENDER OR JIM CROW

Best Wrought-Iron with Machine-  
Cut Square-Thread  
Steel Screw

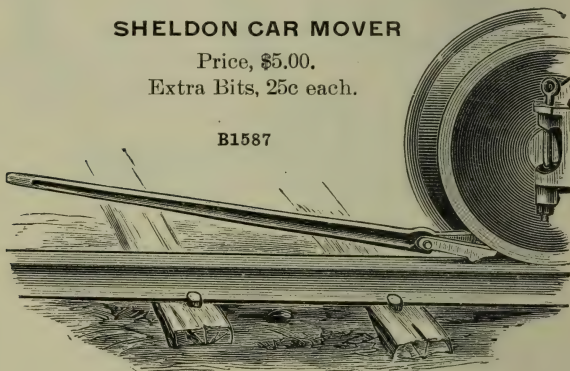
Number .....	00	0	1	2	3	3½	4
For Rails up to ...pounds per yard	16	20	25	50	63	78	95
Price, with Lever .....	13.50	16.00	19.00	25.00	39.80	45.80	51.80

## SHELDON CAR MOVER

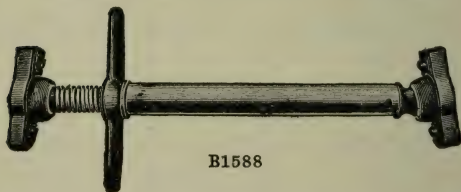
Price, \$5.00.

Extra Bits, 25c each.

B1587



## EXTENSIBLE TRENCH BRACE



Length closed...inches	16	18	21	24	27	30	36	42	48
With 1½ in. Screw or Barrel .. doz.	41.00	42.00	45.00	48.00	52.00	53.00	54.00	56.00	58.00

Braces with 1¾ inch screws, up to 6 feet length, quoted on application.

Screws only, quoted on application.

MOORE'S CHAIN HOISTS

"CYCLONE"  
HIGH SPEED  
CHAIN HOIST



B1591

"ANTI-FRICTION"  
CHAIN HOIST



B1592

"DIRECT"  
DIFFERENTIAL  
PULLEY BLOCK



B1593

"CYCLONE," B1591

"ANTI-FRICTION," B1592

No.	Price Complete	Height of Lift †	Weight Complete with Chains	Chain Pull to Lift Full Load	Ft. of Chain Handled to Lift Load One Foot	Shortest Dist. Bet'n Hooks	Capacity Tons	No.	Price Complete with Chain	Height of Lift †	Weight Complete with Chains	Shortest Dist. Bet'n Hooks	Chain Overhauled to Raise One Foot
30	35.00	8 ft.	62 lbs.	63 lbs.	19 ft.	20 in.	$\frac{1}{2}$	0	25.00	7 ft.	39 lbs.	16 in.	38 ft.
31	45.00	8 "	85 "	85 "	29 $\frac{1}{2}$ "	22 "	$1\frac{1}{2}$	1	30.00	8 "	75 "	20 "	47 "
31 $\frac{1}{2}$	60.00	8 "	107 "	109 "	35 "	24 "	$1\frac{1}{2}$	1 $\frac{1}{2}$	40.00	8 $\frac{1}{2}$ "	90 "	21 "	59 "
32	70.00	9 "	133 "	126 "	39 $\frac{1}{2}$ "	26 "	2	2	50.00	9 "	128 "	23 "	65 "
33	90.00	10 "	195 "	115 "	69 "	31 "	3	3	70.00	10 "	195 "	29 "	108 "
34	110.00	10 "	250 "	115 "	91 "	36 "	4	4	95.00	11 "	250 "	32 "	120 "
35	140.00	12 "	386 "	104 "	123 "	40 "	5	5	125.00	12 "	553 "	36 "	166 "
56	165.00	12 "	402 "	109 "	140 "	42 "	6	6	150.00	12 "	400 "	37 "	168 "
38	200.00	12 "	464 "	130 "	159 "	45 "	8	8	200.00	12 "	580 "	41 "	240 "
510	240.00	12 "	610 "	129 "	191 "	48 "	10	10	250.00	12 "	625 "	41 "	258 "

Larger sizes quoted on application.

†Figures in this column denote approximate height which blocks, with regular length of chain, will lift from level on which operator stands.

For every additional foot of lift desired, two feet extra of both main and hand chain will be necessary.

"DIRECT" DIFFERENTIAL PULLEY BLOCK—B1593

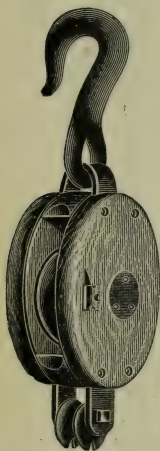
Number	Capacity	Will Lift	Price	Regular Chain	Extra Chain Per Foot	Weight with Chain	Shortest Dist Bet'n Hooks
000	$\frac{1}{4}$ ton	6 feet	18.00	22 feet	.70	20 lbs.	17 inches
00	$\frac{1}{2}$ "	7 "	21.00	26 "	.70	31 "	21 "
11	1 "	8 "	28.00	30 "	.75	53 "	26 "
11 $\frac{1}{2}$	1 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	36.00	33 "	.80	90 "	32 "
12	2 "	9 "	45.00	36 "	.85	128 "	39 "
13	3 "	10 "	60.00	58 "	1.00	167 "	44 "

Allow four feet of chain for each additional foot of lift.



## REGULAR PATTERN TACKLE BLOCKS

With Loose Side Hooks

Single  
With BecketWOOD BLOCKS  
Triple  
Without BecketSnatch Block  
with Swivel HookMETAL BLOCKS  
Also Made  
Triple and Snatch  
Single Double

B1594



B1596



B1597



B1598



B1599

B1595, Double Block, Not Illustrated.

B1600, Triple Block,  
B1600½, Snatch Block,  
Not Illustrated.Any of above Blocks can be furnished either of **Wood** or of **Metal**.(For **Wire Rope** Blocks, see **Wire Rope** and **Attachments**, Index.)

## PRICE LIST WOOD AND METAL TACKLE BLOCK

When ordering, always state whether wanted with **Becket** or without **Becket**.

Size Block .....	4	5	6	7	8	9	10	12	14	15
" Rope, Wood Block "	½	¾	¾	¾	1	1	1½	1½	1¾	1½
" Metal " "	½	¾	¾	¾	1	1½	1½	1¾	1¾	1½
Single Block.....each	.85	.90	1.10	1.30	1.65	1.85	2.75	4.45	7.00	8.00
Double " .....	1.60	1.75	2.00	2.40	2.85	3.40	4.50	7.50	10.50	13.00
Triple " .....	2.15	2.25	2.90	3.50	4.25	4.75	6.25	10.65	15.00	18.00

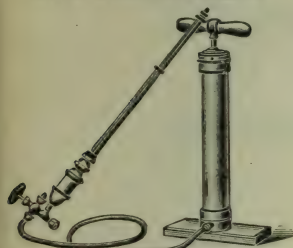
Blocks with **Loose Swivel Hooks**, at special price.**Roller-Bushed** and **Bronze-Bushed Self-Lubricating** blocks can be furnished at special price.**Thick Mortise Blocks**, with **Hooks** or **Shackles**, with or without **Becket** for 1-inch to 2-inch rope, quoted on application.

## PRICE LIST WOOD AND METAL SNATCH BLOCK

Size Block .....	7	8	9	10	12	14	16
" Rope, Wood Block "	¾	1	1½	1½	1½	1¾	2
" Metal " "	¾ & ¾	1 & 1½	.....	1½ & 1¾	1½ & 1½	1¾ & 1¾	2 & 2½
Each .....	4.75	5.75	6.75	8.50	10.00	13.00	17.00

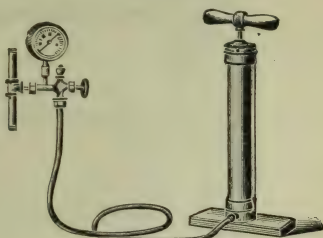
# GAS PROVING PUMPS

WITH MERCURY GAUGE



B1620

WITH SPRING GAUGE



B1621

Pump and Mercury Gauge Complete	Pump and Spring Gauge Complete	Pump Only	Mercury Gauge Complete	Spring Gauge Complete
23.00	28.00	13.00	10.00	15.00

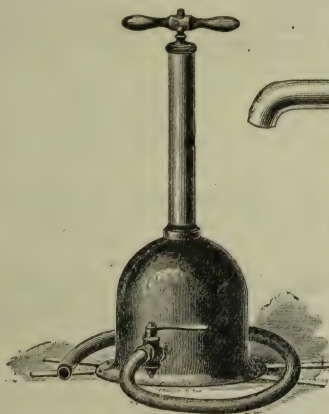
FEATHERS  
MERCURY  
COLUMN



B1625

Each, \$20.00.

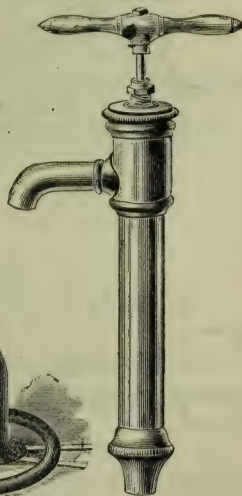
GAS  
SERVICE  
CLEANER



B1626

Each, \$40.00.  
Hose is extra.

GAS  
DRIP  
PUMP



B1627

Each, \$35.00.

Note. The Mercury cannot be lost from a Feather Column.

## SOLDERING COPPERS

## POINTED PATTERN



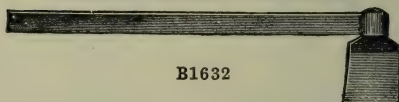
B1630

## FLAT PATTERN



B1631

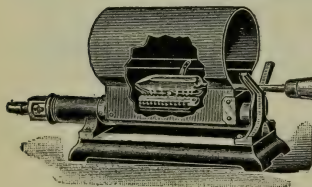
## SWIVEL HATCHET PATTERN



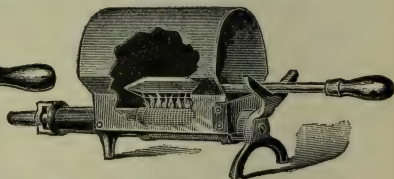
B1632

Pointed, Weight per pair: 1, 1½, 2, 2½, 3, 4, 5, 6, 7, 8, 9, 10, 12, lbs..per lb.	50c
Flat, " 2, 3, 4, 5, 6, 7, 8.....	50c
Hatchet.....	50c

## GAS SOLDERING COPPER HEATERS



B1635



B1636

Each.....	\$1.75	Each.....	\$1.25
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Price does not include soldering copper.

## TINNERS' SNIPS

## REGULAR PATTERN



B1637

## CURVED LIP



B1638

Number .....	10	9	8	*8L	7	6½
Length of cut..... inches	2½	3	3½	3¾	4	4¼
Price Regular Pattern..... per pair	1.40	1.50	2.00	2.75	2.50	3.00
" Curved Lip..... " "	2.25	2.50	3.00	....	3.50	4.00

\*No. 8L Left Hand, for left-handed persons.

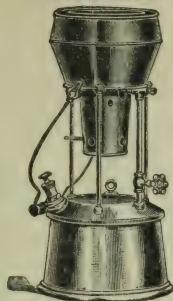
WITH RUBBER BULB



B1640

Price, \$6.00.

WITH PUMP



B1641

Price, \$7.50.

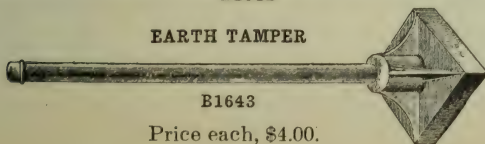
**GASOLINE  
FURNACES**

Price includes one sheet iron hood only.

<b>Burner</b>  <b>EACH</b> <b>10¢</b>	<b>Connecting Pipe</b>  <b>EACH</b> <b>.08¢</b>	<b>Coil</b>  <b>EACH</b> <b>40¢</b>	<b>Coil Cup</b>  <b>EACH</b> <b>30¢</b>	<b>Ell</b>  <b>EACH</b> <b>.6¢</b>
<b>Filling Screw</b>  <b>EACH</b> <b>15¢</b>	<b>Handle Ear</b>  <b>EACH</b> <b>8¢</b>	<b>Handle</b>  <b>EACH</b> <b>25¢</b>	<b>Nuts</b>  <b>No 1 No 2</b> <b>EACH</b> <b>2¢</b>	<b>Valve</b>  <b>EACH</b> <b>45¢</b>
<b>Air Valve</b>  <b>EACH</b> <b>30¢</b>	<b>Plug</b>  <b>EACH</b> <b>6¢</b>	<b>Reservoir</b>  <b>EACH</b> <b>1.80</b>	<b>Bulb</b>  <b>EACH</b> <b>35¢</b>	<b>Shield</b>  <b>No. 10 No. 2</b> <b>EACH</b> <b>50¢</b>
<b>No 3 Shield</b>  <b>EACH</b> <b>51.00</b>	<b>Tee</b>  <b>EACH</b> <b>6¢</b>	<b>Top Plate</b>  <b>EACH</b> <b>20¢</b>	<b>Upright</b>  <b>EACH</b> <b>8¢</b>	<b>Wire for Coil</b>  <b>EACH</b> <b>.05¢</b>

B1642

**EARTH TAMPER**



B1643

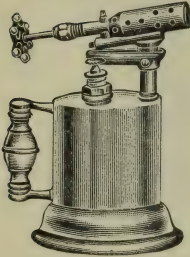
Price each, \$4.00.



GASOLINE BLOW TORCHES

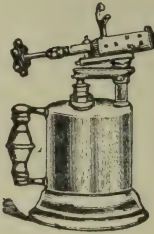
ALCOHOL TORCH AND BLOW PIPE

Regular



B1644

With  
Solder Copper  
Holder



B1645



B1646

1 Pint, each, \$4.50. 1 Pint, each, \$5.00  
1 Quart, each, \$5.00. 1 Quart, each, \$6.00

Brass Torch, \$1.00  
Tin, \$0.75, each.  
Blow Pipe, 40c each.



SOLDER POTS

B1647

Diameter.....inches	5	6	8	10½	13½
Each.....	.50	.60	1.40	2.00	3.80

MALLEABLE IRON MELTING LADLES

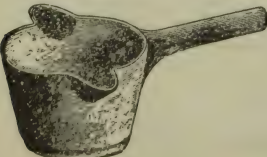


B1648

Diameter of Bowl.....inches	2½	3	4	5	6
Price.....each	.50	.40	.50	.60	.80

CAST-IRON POURING LADLE  
For 1-Inch Pipe Handle

POURING POT



B1649

Capacity, 1 Quart; each, \$1.50.

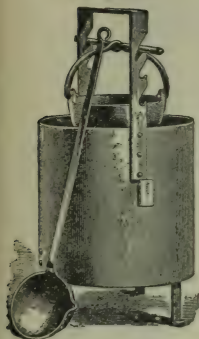


B1651

12 Inch, each, \$3.50.

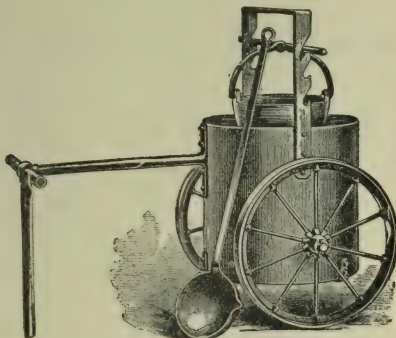
## LEAD MELTING FURNACES

ON LEGS



B1655

ON WHEELS



B1656

Diameter Inches	Grate Inches	Diameter of Pot Inches	Capacity of Pot Lead Pounds	Diameter of Ladle Inches	Capacity of Ladle Lead Pounds	Price Complete on Legs Each	Price Complete on Wheels Each
18	16½	13½	200	6	15	50.00	60.00
24	22	15	450	8	26	60.00	70.00

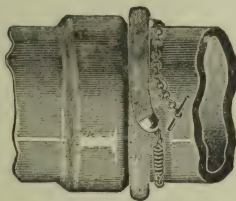
## ASBESTOS JOINT RUNNERS

SQUARE



B1658

## ROUND



B1659

WITH CLAMP



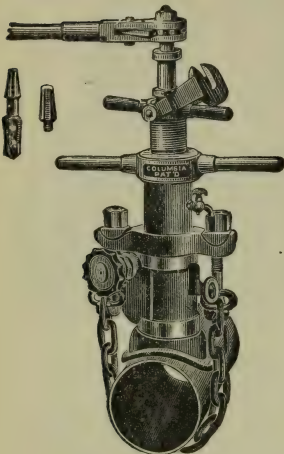
**B1660**

Number.....	1	2	3	4	5	6	7	8	9	10			
Size.....inches	2 to 4	4 to 6	6 to 10	10 to 14	8 to 12	10 to 14	16 to 20	24	30	36			
For Pipe....."	$\frac{1}{2}$	$\frac{3}{4}$	1	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$			
Square.....each	1.25	1.50	2.25	3.00	4.00	5.00	6.75	7.75	8.75	9.75			
Round....."	Special												
Pipe in.	2	3	4	6	8	10	12	14	16	20	24	30	36
W. Clamp	3.00	4.40	4.70	6.00	8.00	9.00	10.00	11.00	12.00	14.00	17.00	19.00	22.00

Larger sizes quoted on application.

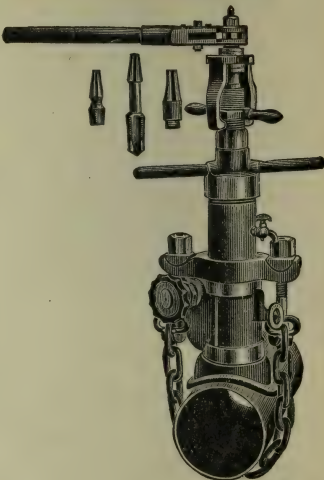
MUELLER WATER PIPE TAPPING MACHINES

COLUMBIA



B1664

ORIGINAL



B1665

Complete.....	90.00	Complete.....	100.00
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PRICE INCLUDES

One each combined Drill and Tap,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ , and 1 inch.  
One each Screw or Hexagon Plug,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ , and 1 inch.  
Four Malleable Iron Saddles, any size.  
One Chain for any size Pipe.

EXTRA COMBINED DRILLS AND TAPS FOR MUELLER AND COLUMBIA MACHINES

Size.....inches	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Price .....each	4.00	4.50	5.50	6.50

Extra Plugs, Saddles and Gaskets	For Mueller Machine	For Columbia Machine
Price, Hexagon or Screw Plugs, any size each	.80	.80
“ Malleable Iron Saddles, any size.. “	1.00	1.00
“ Small Rubber Gaskets..... “	.40	.40
“ Large Rubber Gaskets..... “	1.50	1.50

Power Clevis for Mueller Machine, \$5.00 extra.  
Power Clevis for Columbia Machine, \$5.00 extra.  
Dry Pipe Tapping Machines, quoted on application.

# VALVE BOXES FOR WATER AND GAS

VALVE BOX



B1700

SQUARE HEAD FOR VALVE BOX



B1701

EXTENSION SECTION



B1702

Increases Box 14 inches  
Price, each, \$1.00.

REGULAR COVERS



B1703

Each, \$1.00.



B1704

FLANGED COVER



B1705

Each, \$1.00.

LOCK COVER



B1706

Each, \$1.00.

## VALVE BOXES

5/4-Inch Shaft, No. 6 Base

Number .....	AAA	AA	A	B	C	CC
Extension.....inches	17	22-28	28-40	36-48	42-54	48-60
Price.....each	3.25	3.80	4.00	4.20	4.40	4.65
Number .....	D	DD	E	F	G	H
Extension.....inches	42-66	48-72	60-72	60-84	72-84	72-96
Price.....each	4.85	5.10	5.25	5.50	5.75	6.00

Square Head Valve Boxes, same price as above.

## SPECIAL BASES FOR VALVE BOXES

Style of Base..	No. 4, Round For 4-inch Valves	No. 6, Round or Oval For 6 and 6-Inch Valves	No. 8, Round For 10-Inch Round Valves and Smaller	No. 16, Round For 12-Inch or 16-Inch Round Valves	No. 160, Oval For 10, 12, and 16-Inch Oval Valves	No. 162, Oval For 18 to 24-Inch Oval Valves
	Deduct from Net Price of Box	Incl'd in Net Price of Box	Add to Net Price of Box	Add to Net Price of Box	Add to Net Price of Box	Add to Net Price of Box
Price, each	.25	.....	.25	1.50	.35	1.25

Length of box is changed by using following bases: No. 4 reduces 3 inches, No. 16 increases 4 inches, and No. 160 reduces 6 inches.



## EXTENSION SERVICE BOXES

### 2½ INCH DIAMETER FOR WATER AND GAS

#### COVERS, KEYS AND BOLTS



B1711



B1712



B1713 B1714 B1715



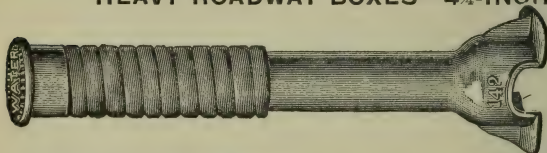
B1710

Size	Extension	Price
No. 88	1 ft. stationary length..... Each	.55
" 89 A	1 " to 1 ft. 8 inches .....	.60
" 90 B	1 " 6 inches to 2 ft. 2 inches..	.65
" 91 C	1 " 9 " " 9 " ..	.70
" 92 C	2 " to 3 ft. 2 inches .....	.73
" 92 D	2 " " 6 " .....	.75
" 93 D	3 " to 4 ft. ....	.80
" 93 E	3 " " 6 inches .....	.83
" 94 D	3 " 6 inches to 4 ft. 9 inches..	.85
" 94 E	3 " " 5 " .....	.90
" 95 E	4 " to 5 ft. 6 inches .....	1.00
" 100 E	4 " 6 inches to 6 ft. ....	1.05
" 100 F	4 " " 6 inches..	1.10

Extension Sections for above, to increase length of box 9, 16½, 28 and 36 inches, quoted on application.

Always state whether for water or gas, when ordering. Boxes with large base for 2 inch cocks at special price, or use Roadway Boxes bottom of page.

### HEAVY ROADWAY BOXES—4¼-INCH SHAFT

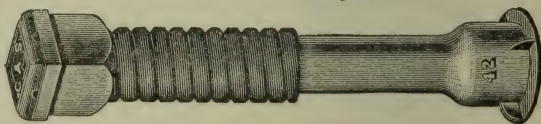


**ROUND TOP  
OPEN BASE  
B1720.**

Also if with  
Flanged Base,  
B1721.

**SQUARE TOP  
FLANGED BASE  
B1722.**

Also if with Open  
Base, B1723.



Extra Covers for Boxes, same as B1703. etc.

#### ROUND HEAD, OPEN BASE AND FLANGED BASE

Number .....	141 Pd.	142 Rd.	142 Rd.	143 Rd.	144 Rd.	145 Rd.
Extension.....inches	18-24	27-34	27-42	34-48	39-54	46-60
Price.....each	2.45	2.65	2.95	3.10	3.20	3.30

#### SQUARE HEAD, FLANGED BASE AND OPEN BASE

Number .....	137 Sq.	138 Sq.	140 Sq.	141 Sq.	142 Sq.	143 Sq.
Extension.....inches	12	16	18-24	21-31	27-36	31-42
Price.....each	2.20	2.35	2.50	2.60	2.80	2.95



## MATTHEWS



## FIRE HYDRANTS

NOTE.—When ordering Hydrants, specify whether Single or Double-Valve Hydrants are required.

For size of Hydrant, specify classified size, the diameter of valve opening, stand pipe, and connecting pipe.

State depth from pavement to bottom of pipe, to ensure getting the right length of Hydrant.

Send hose-gauge (part of coupling will answer), so that the Hydrant-nozzle may be accurately fitted to it.

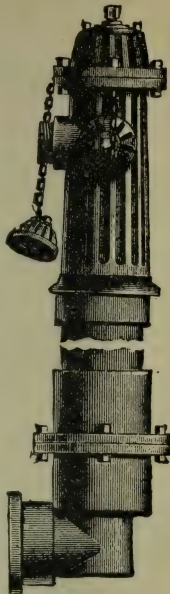
State size of pipe the Hydrants are to connect with, and whether Hub, Flange, or some other style connection.

If other Hydrants are in use, state if they open by turning to the right or left, and give size and shape of nut for wrench.

For new places, unless otherwise specified, Hydrants are made to open by turning to the left.

B1730

## BOURBON



B1737

## MATHEWS FIRE HYDRANTS WITH SLIDING FROST CASE

Classified Size	Pave-ment to Center of Inlet	One 2½-Inch Hose Nozzle	Two 2½-Inch Hose Nozzles	Three 2½-Inch Hose Nozzles	One Steamer Nozzle	One Steamer and One 2½-Inch Nozzle	One Steamer and Two 2½-Inch Nozzles	For each Add'l Ft. in Length of Frost Case add
4 inches	5 ft.	32.00	34.00	....	....	....	....	1.00
4½ "	5 "	....	38.00	....	38.00	40.00	42.00	1.00
5 "	5 "	....	44.00	46.00	44.00	46.00	48.00	1.00
6 "	5 "	....	50.00	52.00	50.00	....	54.00	1.00

## MATHEWS SPECIAL DOUBLE VALVE HYDRANT

Add to List Price, 4 feet and 4½ feet, \$12.00; 5 feet and 6 feet, \$15.00.

The lower valve is so constructed that it acts as a supplemental or auxiliary valve, to allow the Hydrant to be taken up without shutting off the water from the district.

Patent Independent Nozzle Cut-off—Add to list for ordinary 2½-inch Nozzle \$6.00 per nozzle; for Steamer 4-inch Nozzle, \$9.00 per nozzle.

## BOURBON PATENT FIRE HYDRANTS

Valve Opening	Diam-eter Stand Pipe	Pave-ment to Bottom of Inlet	One 2½-Inch Dis-charge	Two 2½-Inch Dis-charge	Steamer	Steamer and One 2½-Inch	Steamer and Two 2½-Inch	Extra for Each Additional Foot Length
2 inches	3 in.	5 ft.	17.00	....	....	....	....	.50
3 "	4 "	5 "	21.50	....	....	....	....	.75
4 "	5 "	5 "	32.00	34.00	....	....	....	1.00
4½ "	5½ "	5 "	....	36.00	36.00	38.00	40.00	1.00
5 "	6 "	5 "	....	41.00	41.00	43.00	45.00	1.00

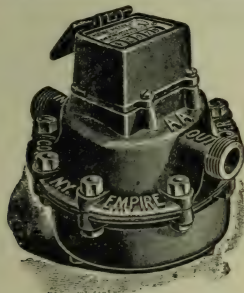
Hydrants 6 inches longer than even feet, charged at price of next even foot.

A frost case with this hydrant not necessary.

# WATER METERS

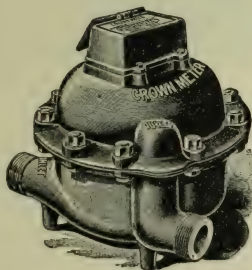
## EMPIRE

With Straight Reading Register



B1738

## CROWN



B1739

## EMPIRE WATER METER

Size.....inches	$\frac{1}{2}$ or $\frac{3}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	6
Greatest Proper } Cubic Feet	2	4	8	12	20	.....	.....	.....
Quantity per minute } ..Gallons	15	30	60	90	150	.....	.....	.....
Price.....	13.34	20.00	26.67	53.34	80.00	133.34	300.00	533.34
Connections.....per set	.54	.80	1.07	Flanges furnished without charge.				

Connections are made only for  $\frac{1}{2}$  or  $\frac{3}{8}$ ,  $\frac{3}{4}$  and 1-inch meters, and are always sent with these sizes, unless otherwise instructed. These sizes are made with male threads, while the  $1\frac{1}{2}$ -inch meters have female threads. All threads are cut to fit standard pipe.

## CROWN WATER METER—B1739

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$ or $\frac{3}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	6
Greatest Proper.... } Cubic Ft.	1	2	4	8	12	20	36	72	120
Quantity per minute } ..Gallons	$7\frac{1}{2}$	15	30	60	90	150	270	540	900
Price.....	13.34	16.00	28.00	40.00	66.67	86.67	180.00	333.33	666.66
Connections....per set	.40	.55	.80	1.10	Flanges without extra charge.				

Connections are made only for  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and 1-inch meters, and are always sent with these sizes, unless we are otherwise instructed. These sizes are made with male threads, while the  $1\frac{1}{2}$ -inch and 2-inch meters have female threads. All threads are cut to fit standard pipe. The 3, 4, and 6-inch meters are made with flanges.

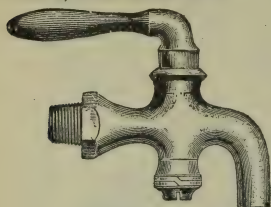
Fish Traps are made for all sizes of all our meters, and their use is particularly recommended in connection with the sizes above  $1\frac{1}{2}$  inch, since they afford valuable protection against any foreign substance that is liable to work into the meters from the street main, and damage or destroy the working parts.

Size .....inches	$\frac{3}{8}$ to 1	$1\frac{1}{2}$ to 2	3	4	6	10 and 12
Price.....	6.67	8.00	13.34	20.00	26.67	200.00



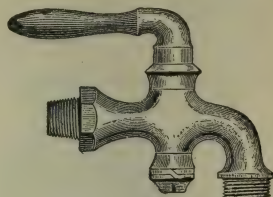
## LEVER HANDLE BIBB COCKS

PLAIN, FOR IRON PIPE



B1740

HOSE, FOR IRON PIPE

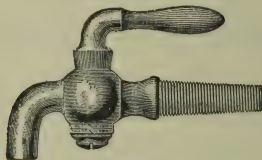


B1741

Size ..... inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Finished Iron Pipe, per doz.	15.50	18.00	21.50	29.00	41.00	70.00	110.00	210.00
Finished, for Hose and Iron Pipe... "	17.50	20.00	23.50	32.00	46.00	76.00	118.00	225.00

Rough Bibbs, in quantities, special price.

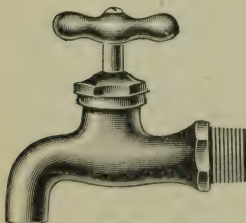
## TO SCREW INTO WOOD



B1742

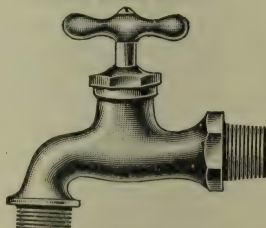
Size..... inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Price, Finished..... per dozen	23.00	27.00	33.00
" Nickel-plated..... "	25.00	30.00	37.00

FOR IRON PIPE



B1750

FOR IRON PIPE



B1751

Size..... inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Plain Bibbs Finished, doz.	12.00	13.00	16.00	20.00	40.00	65.00	100.00	200.00
Hose " " "	14.00	15.00	18.00	22.00	43.00	69.00	106.00	210.00

Bibbs for Lead Pipe, same list as above.

Nickel-plated Bibbs, extra. Rough Bibbs in quantities, special price.

T HANDLE STOP

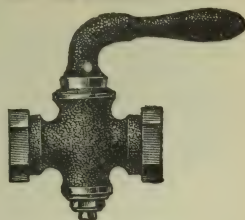


B1752

**ROUGH  
STOP COCKS**

Common  
Flat Way and Round Way

LEVER HANDLE STOP

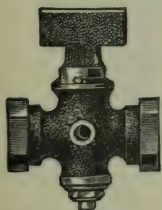


B1753

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Flat Way .per dozen	15.00	17.00	22.00	26.00	38.00	60.00	90.00	180.00
Round Way “	....	21.00	27.00	32.00	54.00	84.00	126.00	250.00

Same list price applies to Cocks for Lead Pipe.

T HANDLE

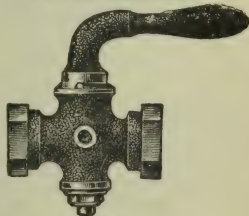


B1754

**ROUGH STOP AND  
WASTE COCKS**

Common  
Flat Way and Round Way

LEVER HANDLE

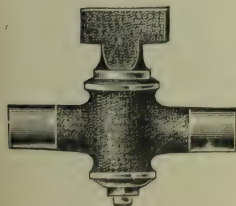


B1755

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Flat Way .per dozen	17.00	19.00	24.00	23.00	41.00	64.00	96.00	190.00
Round Way “	....	23.00	29.00	34.00	57.00	88.00	132.00	260.00

Same list prices applies to Cocks for Lead Pipe.

FOR LEAD PIPE



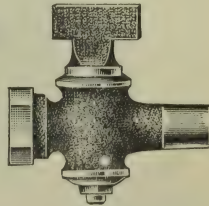
B1756

Flat or Round Way

**ROUGH STOP COCKS  
OR STOP AND  
WASTE**

T or Lever Handle  
Flat Way or Round Way  
Lead Pipe Both Ends or  
Lead and Iron Pipe

FOR LEAD AND  
IRON PIPE

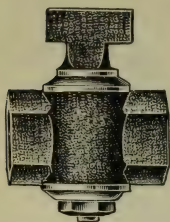


B1757

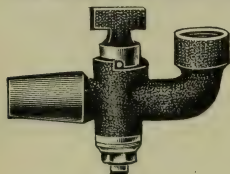
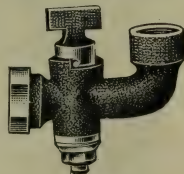
Flat or Round Way

Use same lists prices as for Iron Pipe Cocks.

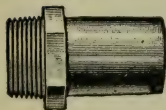
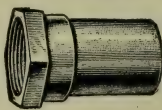
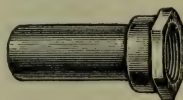
See list prices above.

**STOP AND STOP WASTE COCKS****"H" PATTERN****B1758****T Handle or Lever Handle****Iron Pipe or Lead Pipe****ROUND WAY**

Size..... inches	½	¾	1	1¼	1½	2
Stop Cocks..... per dozen	18.00	23.50	26.50	44.00	70.00	185.00
Add for Waste..... "	2.00	2.00	2.00	3.00	4.00	10.00

**FOR LEAD AND IRON PIPE****B1759****HYDRANT COCKS****B1760****FOR IRON PIPE**

Size..... inches	½	¾	1	1¼	1½	2
Flat Way..... per dozen	21.00	27.00	31.50	45.00	69.00	200.00
Round Way..... "	25.00	32.00	37.50	61.00	93.00	270.00

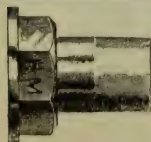
**SOLDERING NIPPLES****MALE****B1770****FEMALE****B1771****SOLDERING UNION****B1772**

Size.. ins	½	¾	1	1¼	1½	2	2½	3	4			
Nipple..dz	2.25	2.25	2.75	3.50	5.00	6.50	10.00	12.50	18.00	32.00	46.00	80.00
Union. "	4.00	4.00	4.00	4.50	6.00	8.00	12.00	15.00	21.00	....	....	....

**"H. MUELLER" SOLDER NIPPLES AND UNIONS**

Nipples are with either male or female thread

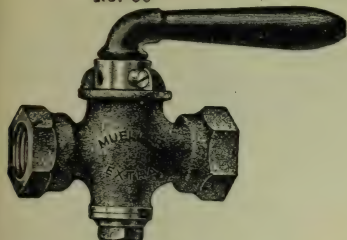
Size ....inches	⅜-¼	⅜	½	¾	1	1¼	1½	2	2½	3	4
Nipples....each	.20	.25	.30	.40	.55	.85	1.05	1.50	2.65	3.85	6.65
Unions..... "	.30	.30	.35	.50	.65	1.00	1.25	1.75	....	....	....

**GAS METER UNION COUPLING****Plain for Lead Pipe****B1773**

Size..... Lights	3	5	10	20	30	45	60
Plain, for Lead Pipe.... each	.30	.40	.55	.90	1.25	1.45	1.70
Threaded for Iron Pipe .. "	.35	.45	.75	1.10	1.50	1.60	1.85

# H. MUELLER ROUGH GROUND KEY COCKS

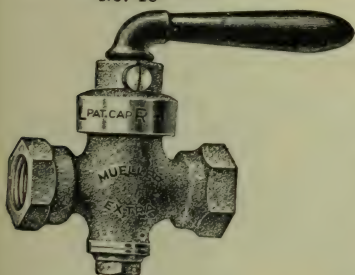
No. 60



B1775

	No.	No.
Iron Pipe, Flat Way,	60;	Round Way, 66
Lead " "	56;	" " 62
Lead and Iron "	58;	" " 64

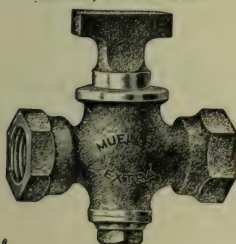
No. 48



B1780

	No.	No.
Iron Pipe, Flat Way,	48;	Round Way, 54
Lead " "	44;	" " 50
Lead and Iron "	46;	" " 52

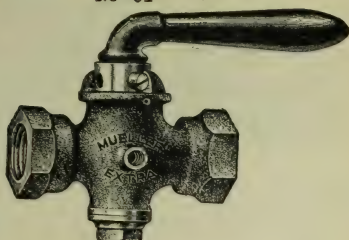
No. 24, ROUND WAY  
No. 36, FLAT WAY



B1782

	No.	No.
Iron Pipe, Flat Way,	36;	Round Way, 24
Lead " "	32;	" " 20
Lead and Iron "	34;	" " 22

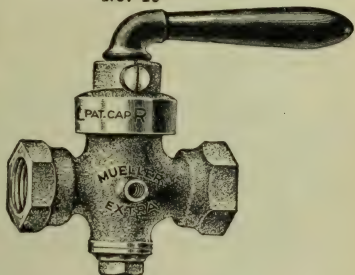
No 61



B1776

	No.	No.
Iron Pipe, Flat Way,	61;	Round Way, 67
Lead " "	57;	" " 63
Lead and Iron "	59;	" " 65

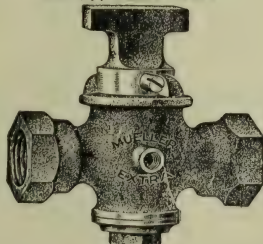
No. 49



B1781

	No.	No.
Iron Pipe, Flat Way,	49;	Round Way, 55
Lead " "	45;	" " 51
Lead and Iron "	47;	" " 53

No. 25, ROUND WAY  
No. 37, FLAT WAY



B1783

	No.	No.
Iron Pipe, Flat Way,	37;	Round Way, 25
Lead " "	33;	" " 21
Lead and Iron "	35;	" " 23

See next page for price list.



STOP COCKS, ROUGH

(See B1775, etc.)

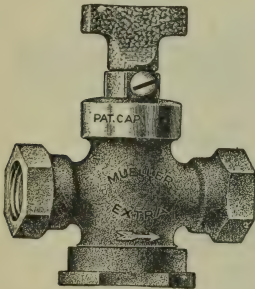
Cocks for Lead Pipe, or for Lead one end and Iron Pipe other end same price as below.

Pipe Size.....inch.	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
Nos. 60, 48 and 36, Flat Way.....each	1.20	1.25	1.40	1.85	2.15	3.15	5.00	7.50	15.00
Nos. 66, 54 and 24, Round Way.....each	....	1.60	1.75	2.25	2.65	4.50	7.00	10.50	20.85

STOP AND WASTE COCKS, ROUGH

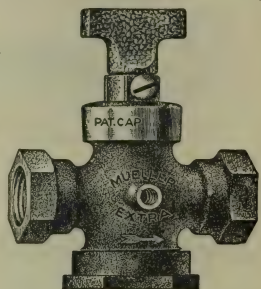
Pipe Size.....inch.	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
Nos. 61, 49 and 37, Flat Way.....each	1.35	1.40	1.60	2.00	2.35	3.40	5.35	8.00	15.85
Nos. 67, 55 and 25 Round Way.....each	....	1.75	1.90	2.40	2.85	4.75	7.35	11.00	21.65

No. 78



B1785

No. 79

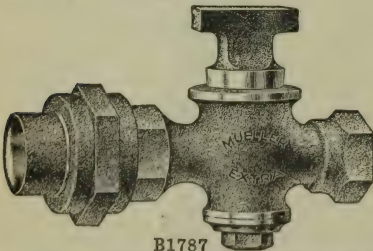


B1786

"H M"  
INVERTED KEY  
ROUND WAY  
CURB COCKS

Pipe Size.....inch.	1/2	3/4	1	1 1/4	1 1/2	2
Stop Cock.....each	2.10	2.75	3.25	5.40	8.50	12.85
Stop and Waste....."	2.25	2.90	3.40	5.65	8.85	13.35

If with Lead Flange, Union Connections; (see on B1787) one end or both ends, special price on application.

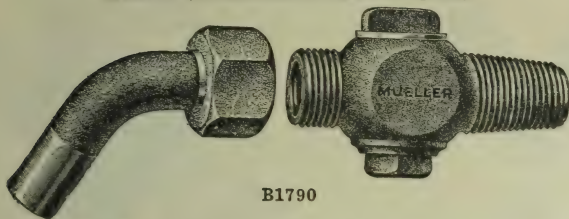


B1787

"H M" LEAD FLANGE  
ROUND WAY COCK

Also made Flanged Both Ends. Also made Stop and Waste.

Pipe Size.....inch.	1/4	3/8	1/2	1	1 1/4	1 1/2	2
Flange one end only, Stop Cock.....ea.	2.35	3.00	4.00	5.70	8.65	12.90	20.15
Stop and Waste....."	2.50	3.15	4.15	5.95	9.00	13.40	21.00
" both ends, Stop Cock....."	2.95	3.75	5.05	6.65	11.10	15.95	24.80
Stop and Waste....."	3.10	3.90	5.20	6.90	11.45	16.45	25.65

**MUELLER CORPORATION COCKS****No. 4, FOR SCREW PLUG**Mueller Threads and  $\frac{1}{8}$  Band Coupling**B1790**

Can furnish with straight coupling if desired.

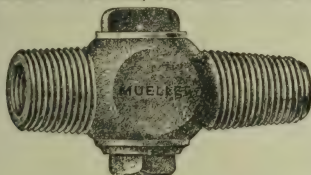
Can furnish with Iron Pipe Thread on inlet end if desired.

Lead Pipe. Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	*2
Each.....	1.45	1.60	2.25	2.85	4.50	9.00	12.00	20.00

\*Outlet threads of  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , and 2 inches are increasing iron pipe, as shown on B1792. Can also furnish Cocks for Payne Tapping Machine.

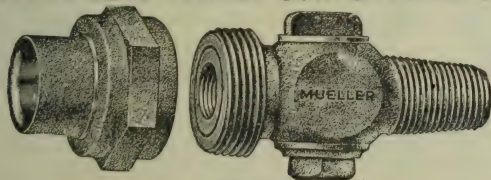
**No. 6, FOR SCREW PLUG**

Inlet End Mueller Thread, Outlet End Iron Pipe Thread

**B1792**

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
As Illustrated.....each	1.25	1.35	1.85	2.40	3.85	7.80	10.40	17.40

If with Union Coupling as shown on B1790, use B1790 list.

**MUELLER LEAD FLANGE CORPORATION COCK****B1793**

With Mueller Thread or with Iron Pipe Thread, on inlet end, as desired.

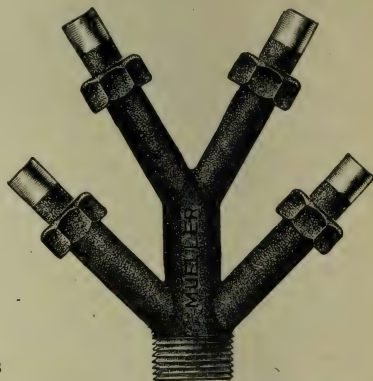
Size .....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each .....	1.50	1.85	2.30	2.95	4.20	8.30	13.05	21.10

# H MUELLER BRANCH WATER CONNECTIONS

BRASS



**B1794**  
Without  
Unions



**B1795**  
With Unions

Can furnish with Plain Outlet for lead pipes, also with Lead Flange Outlet special. Also made with inlets threaded, at special price.

Outlets Threaded for Iron Pipe, unless ordered otherwise.

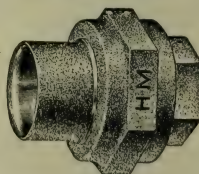
	Plain Inlets Lead Pipe	Union Inlets Lead Pipe
1¼-inch Outlet, Two Inlets.....	2.05	4.10
1½ " " Three " .....	3.25	6.00
2 " " Four " .....	5.40	8.60
2½ " " Six " .....	9.70	18.35
3 " " Eight " .....	16.25	26.05

**DOUBLE CURB CONNECTION**  
With ¾-inch Male Thread Inlet



**B1796**

**LEAD FLANGE**  
Union Couplings



**B1797**

Two ½-inch Lead Pipe Outlets.....1.30  
 " ½ " Iron " Thread Out-  
 lets .....1.40  
 With Lead Flange Connections, special.

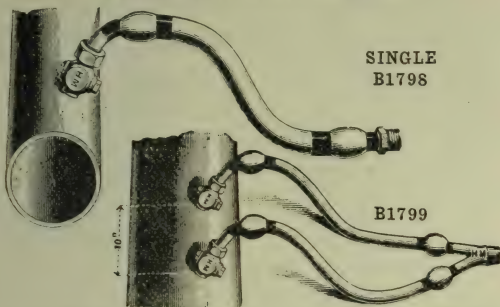
Lead one end, and female iron pipe  
 thread other end.  
 Also made with both ends flanged for  
 lead pipe.

## PRICE LIST LEAD FLANGE UNION COUPLINGS

Size .....	¾	½	¾	¾	1	1¼	1½	2
Lead and Iron, B1797.....each	.65	.75	1.10	1.20	1.75	2.75	3.55	5.05
Lead and Lead .....	1.20	1.45	1.95	2.20	3.10	5.10	6.20	9.55

# WIPED JOINT GOOSE NECKS

With Mueller Corporation Cocks



Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
B1798. Single.....each	3.60	4.30	5.25	6.25	9.20	15.60	23.15	35.50

## MANIFOLD GOOSE NECK CONNECTIONS

B1799

Outlets	Inlets	With Plain Lead Pipe Branches	With Lead Union Couplings	With Lead Flange Union Couplings
$1\frac{1}{4}$ inches, with Two	$\frac{3}{4}$ inch Branches	14.90	16.95	14.05
$1\frac{1}{4}$ " " " " " " " " " " " "	1 " " " " " " " " " " " "	20.10	22.15	19.10
$1\frac{1}{2}$ " " " " " " " " " " " "	Three $\frac{3}{4}$ " " " " " " " " " " " "	23.35	26.05	22.45
$1\frac{1}{2}$ " " " " " " " " " " " "	1 " " " " " " " " " " " "	31.40	34.10	30.20
2 " " " " " " " " " " " "	Four $\frac{3}{4}$ " " " " " " " " " " " "	32.70	35.90	30.90
2 " " " " " " " " " " " "	1 " " " " " " " " " " " "	43.70	46.90	41.45
$2\frac{1}{2}$ " " " " " " " " " " " "	Six $\frac{3}{4}$ " " " " " " " " " " " "	53.35	62.00	55.15
$2\frac{1}{2}$ " " " " " " " " " " " "	1 " " " " " " " " " " " "	70.80	79.45	72.05
3 " " " " " " " " " " " "	Eight $\frac{3}{4}$ " " " " " " " " " " " "	78.50	88.30	81.15
3 " " " " " " " " " " " "	1 " " " " " " " " " " " "	103.20	113.00	105.10

Can be furnished with outlet opening plain for Lead Pipe, also Lead Flange Coupling, if desired. See B1794 and B1795.

## MUELLER WIPE JOINT GAS METER CONNECTIONS

Meter Ends, Quarter Bend Meter Union Couplings

Pipe Ends, Mueller Wipe Joint Union Meter Cock and Outside Thread Soldering Nipple



B1800



B1801

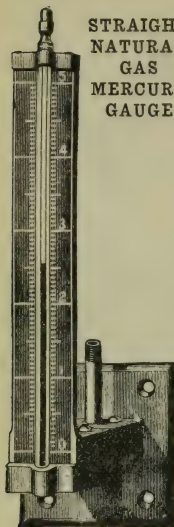
Prices quoted on application.

Can be furnished with straight unions instead of bent, also with cock without union coupling, or with solder nipple instead of cock. Can also be furnished with cup joints instead of wiped joints.

State whether male or female nipples are wanted. Can furnish any lengths desired.



## GAS PRESSURE GAUGES



STRAIGHT  
NATURAL  
GAS  
MERCURY  
GAUGE

B1802

5 Pound, each, \$5.00.  
10, 15, 20, or 25 lb.  
Gauges, Special.

NATURAL  
GAS  
U  
MERCURY  
GAUGE



B1803

3 Pound  
Each, \$4.50.

SPRING GAUGE  
FOR  
NATURAL GAS

With  
Steel Tube Spring  
for any Required  
Pressure



B1805

See B884  
This Book.

ARTIFICIAL  
GAS  
U  
WATER  
GAUGE



B1804

Special.  
6, 8, 10, and 12 in.  
Sizes.

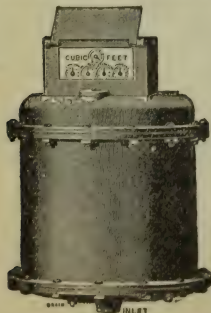
## PITOT TUBE GAUGE

Not Illustrated

For measuring volume of gas flowing from pipe line or gas well.

Two patterns—Expert Pattern and Permanent Pattern.

Price complete with one Tube and Spring Gauge, \$35.00; without Spring Gauge \$31.00. Single Tubes, extra, \$2.00; Double Tubes, extra, \$4.00.



## EQUITABLE DRY METERS

For Fuel and Illuminating Gas

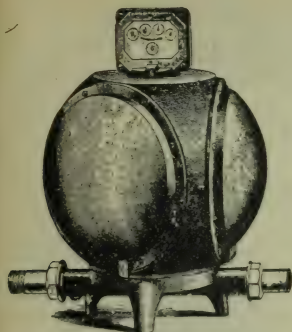
B1807

Numbers.....	1	2	3	4	4½	5	6
Pipe Size ...in.	¾	1	1	1¼	1½	1½	2
Capacity, cu. ft. per hr.	300	400	500	600	600	1,000	1,200
Price.....each	14.00	14.50	15.00	16.00	16.50	25.00	26.00

Cut shows vertical dial, with flat dial if desired.

Tested on 30 pounds air pressure, and will stand high pressure.

Will run full rated capacity on 2 inches water pressure.



B1808

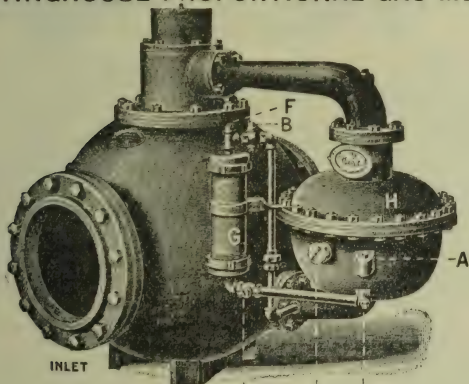
## TOBEY NATURAL GAS METERS

Size No.	Iron Pipe Brass Union Connections Inches	Iron Pipe Connections Without Union Inches	Capacity Per Hour 2 Inch Water Pressure Cubic Feet	List
1	1	1¼	300	15.50
2	1¼	1½	500	22.00
3	1½	1¾	800	34.00
4	2	.....	1,500	90.00

The capacity doubles when you increase the pressure four times.

Tobey Meters are not made to stand high pressure. The body, or case, is tested to 25 pounds pressure, but they must not be put in service on a greater pressure than 16 ounces. Six to 10 ounces is the proper pressure on which they should be used.

## WESTINGHOUSE PROPORTIONAL GAS METER



INLET

B1809 C D E

Size of Conne- ctions Inches	Capacity in Cubic Feet Per Hour	*Price	Height Inches	Floor Space Inches	Size of Conne- ctions Inches	Capacity in Cubic Feet Per Hour	*Price	Height Inches	Floor Space Inches
3	5,000	135.00	20	15 x 28	6	30,000	278.00	24	23 x 35
3	6,000	143.00	20	15 x 28	8	40,000	335.00	30	30 x 42
3	8,000	152.00	20	15 x 28	8	50,000	415.00	30	30 x 42
4	10,000	158.00	22	19 x 30	10	75,000	567.00	48	37 x 56
4	15,000	188.00	22	19 x 30	12	100,000	667.00	48	37 x 56
6	20,000	210.00	24	23 x 35	12	125,000	900.00	48	37 x 56
6	25,000	248.00	24	23 x 35	12	150,000	1,050.00	48	37 x 56

Prices include sealing fluids. Loose flanges are furnished with these meters.

Westinghouse meters are all metal, and tested to withstand a pressure of 50 pounds per square inch. Heavier meters quoted on application.

If meters are used on high pressure the readings should be corrected by using the proper multiplier.

## FULTON NATURAL GAS REGULATORS

### FULTON HOUSE REGULATOR

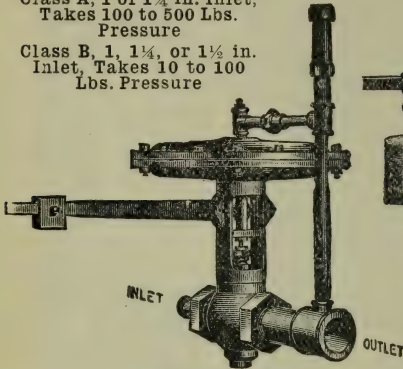
Reduces to Ounces

### HIGH PRESSURE REGULATOR

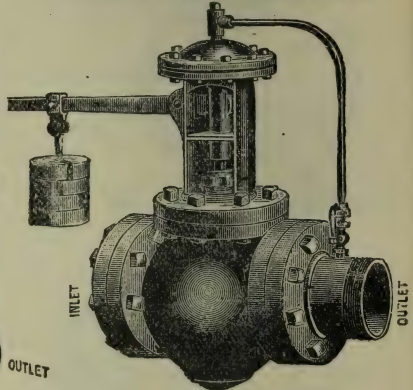
Will Reduce Well-Pressure or High-Pressure Lines for Safe Handling

Class A, 1 or 1½ in. Inlet,  
Takes 100 to 500 Lbs.  
Pressure

Class B, 1, 1¼, or 1½ in.  
Inlet, Takes 10 to 100  
Lbs. Pressure



B1810



B1811

Low Pressure Line Regulators are similar to B1810, having large diaphragm. Regulators 3-inch and larger have flanges and bolts like B1811.

Inlet Inches	Outlet, Inches	Price Each	Inlet Inches	Outlet, Inches	Price Each
1	1, 1¼, 1½, or 2	20.00	4	4, 4½, 5, 5½, or 6	90.00
1¼	1¼, 1½, or 2	25.00	6	6 to 8	150.00
1½	1½ or 2	30.00	8	8 to 10	225.00
2	2, 2½, 3, or 4	40.00	10	10	325.00
2½	2½, 3, or 4	55.00	12	12	450.00
3	3, 3½, 4, or 6	70.00	16	16	650.00

## THE HIGH PRESSURE REGULATOR

Reduces well pressure of several hundred pounds to 100 pounds, 50 pounds, etc., as desired. When ordering, state pressure on inlet side, also pressure you wish to reduce to.

## THE LOW PRESSURE REGULATOR

Has a large diaphragm as shown on B1810, and is intended to reduce 5, 10, 20, or 50 pounds, etc., pressure to a lower pressure, generally 6 or 8 ounces, although they will take gas at 200 pounds pressure and reduce it to a pressure of a few ounces; but a regulator does not give so good satisfaction where so great a reduction is to be made in one valve. Where well pressure is to be reduced to a low pressure, two regulators should be used, a high pressure regulator to reduce the pressure to approximately 50 pounds, before it passes into the low pressure regulator.

Always state pressure on inlet, also to what pressure gas is to be reduced.

## FULTON BOILER REGULATORS

Similar to B1811 high pressure regulator, except the small by-pass or pilot pipe on top of regulator is connected to dome of boiler instead of outlet end of regulator, so that the steam pressure acts on the diaphragm to open and close the regulator gradually as the steam pressure falls or rises from a given point. Gas should be fed into the boiler regulator at not over two pounds pressure, a few ounces being the most suitable. Can be made special for as high as 50 pounds gas pressure.

Size..... in.	1	1¼	1½	2	2½	3	3½	4	5	6	8
Price...each	18.00	23.00	28.00	40.00	48.00	55.00	65.00	75.00	90.00	110.00	165.00

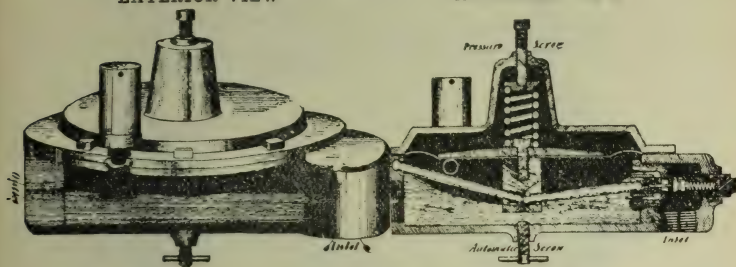
Boiler Regulators should always have inlet and outlet of the same size, which in all cases should be as large as the pipe supplying the furnace.

All Regulators 3-inch and larger have flanged ends with extra flanges bolted on.

# LITTLE GIANT GAS REGULATORS HOUSE REGULATOR

EXTERIOR VIEW

SECTIONAL VIEW



B1814

No. 1, 1x1 in., 8.00. No. 2, 1¼x1¼ in., 10.00.

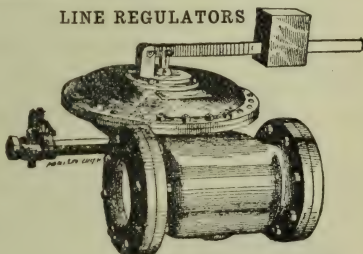
The No. 1 will reduce direct from the well or high pressure line and give steady pressure in the house at from 6 ounces to 3 pounds, as required. The pressure is changed by the set-screw on top; the screw in the bottom opens the automatic valve. The No. 2 has 1¼ inch connections and is well adapted for house use where the pressure is 20 pounds or less. It has no automatic valve.

## LIGHT LINE REGULATORS

## LINE REGULATORS



B1815



B1816

## LIGHT LINE REGULATORS, B1815

Number	Inlet Inches	Outlet Inches	Each	Number	Inlet Inches	Outlet Inches	Each
5	1½	½	4.00	9	1	1	8.00
6	1½	¾	5.00	10	1	1½	9.00
7	2¼	¾	6.00	12	2	2	30.00
8	3¼	1	7.00	....	....	....	....

For gas engine, state horse power of engine, gas pressure, and size of supply pipe.

## HIGH OR LOW PRESSURE LINE REGULATORS, B1816

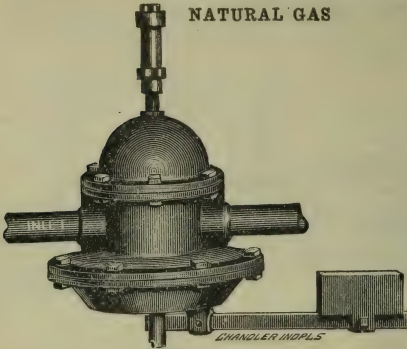
Size .....	..... inches	1¼	1½	2	3	4	6	8
Price.....	..... each	16.00	25.00	40.00	70.00	90.00	150.00	225.00

The High Pressure Regulator reduces pressure of 200 to 300 pounds or more, to say 20 or 30 pounds. We can furnish these to reduce to any pressure, if pressure is stated when ordering.

The Low Pressure Regulator will reduce any pressure to a few ounces, but it is best to use two regulators to reduce from very high pressure. They are set to reduce to 2 or 3 ounces, but by applying weights the same regulator will give 4 or 5 pounds pressure.

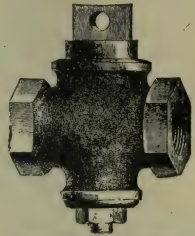


WRIGHT REGULATORS



B1820

BRASS AND IRON  
GAS COCKS



See B656 to B670

No.	Inlet	Outlet	Reduces	Price
1	1 inch	1 inch	Rock Pressure, or less, to Ounces.....	8.00
3	2 "	2 "	" " " 25 to 150 Pounds..	45.00
6	2 "	2 "	Rock Pressure to Ounces.....	35.00

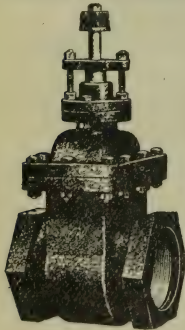
Nos. 1 and 5 have Automatic Shut-off Valves. The Automatic Attachment on No. 5 is a new arrangement by which the cut-off is prevented from closing so long as there is an ounce of pressure in the mains.

ALL IRON NATURAL GAS VALVE

HEAVY VALVES

Special 2-inch Screwed, for 300-lb. Gas Well use, \$10.00.  
Medium Valves, 2 to 16-inch Screwed and Flanged, for 150 lbs. pressure, quoted on application.

Extra Heavy Valves for High Pressure  
Natural Gas and Oil Lines



B1819

Size.... inch	2	3	4	5	6	8	10	12
Screwed..Each	12.30	17.00	23.00	29.00	36.00	65.00	100.00	131.00
Flanged "	13.50	19.00	25.00	31.50	39.00	68.00	105.00	142.00
" with " }	.....	25.00	30.00	40.00	52.50	79.00	124.00	173.00
Flanges and Bolts }								

The above valves are suitable for 500 lbs. pressure.

ALL IRON HYDRAULIC GATE VALVES

For Extreme High Pressure Natural Gas and Oil

Size..... inch	2	3	4	6	8	10	12
Screwed.....each	14.00	25.00	38.00	60.00	95.00	135.00	200.00
Flanged.....	27.00	40.00	63.00	99.00	140.00	235.00	
" with..... }	.....	35.00	50.00	80.00	125.00	175.00	275.00
Flanges and Bolts }							

Hub End Natural Gas Valves quoted on application.

All Iron Valves with casing threads, list same as pipe sizes as follows: 4 or 4½-inch casing=4½-inch, 5½ or 6¼-inch casing=6-inch, etc.

# **GAS AND OIL WELL PACKERS** **DRESSER CAP PACKER**



**B1821**

Size 2 inch Tubing ....	4¼ Casing	4½ Casing	5% Casing	6¼ Casing
Length of Rubber.....	10 inch	10 inch	16 inch	16 inch
Price Complete.....	12.00	12.00	22.00	26.00
“ Rubber, only.....	6 00	6.00	15.00	16.00

# **ARMOUR CONE PACKER**



**B1822**

2 x 5% x 10 inch Rubber Complete .....	\$16.00	Rubber only \$7.00
2 x 6¼ x 10 “ “ “ .....	18.50	“ “ 9.00

# **HOADLEY WALL PACKER**



**B1823**

2 inch for 4 or 4¼ inch Casing, 12-inch Rubber.....	each	\$22.00
2 “ “ 4¼ “ “ 12 “ “ .....	“	23.00
2 “ “ 5% “ “ 14 “ “ .....	“	30.00
3 “ “ 5% “ “ 14 “ “ .....	“	40.00

# **PONEY PACKER**



**B1824**

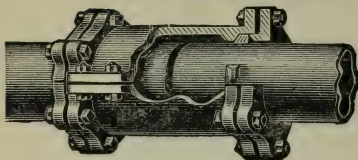
¾ inch or 1 inch to pack, 2 inch hole.....	each	\$6.00
Extra Rubbers .....	“	3.00

# **DAYTON GAS PIPE SADDLES—B1825** Malleable

Size..... inch	2	3	4	4¼	4½	5 or 5%	5%	6	6	6¼	6¼
Tapped.. “	1-1½	1-2	1-2	1-2	1-2	1-2	2½-4	1-2	2½-4	1-2	2½-4
Each .....	1.00	1 00	1.25	2.00	2.50	2.75	5.50	2.50	5.75	3.00	5.75
Size .... inch	6%	6%	7%	7%	8	8	10	10	12	12	....
Tapped.. “	1-2	2½-4	1-2	2½-4	1-2	2½-4	1-2	2½-4	1-2	2½-4	....
Each.....	4.25	6.00	4.50	6.50	4.50	6.50	5.50	6.75	6.25	8.75	....

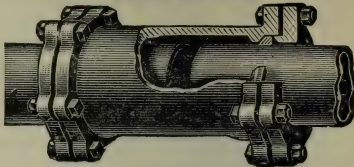
## WATSON SLEEVES

SPLIT SLEEVE



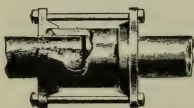
B1834

SOLID SLEEVE



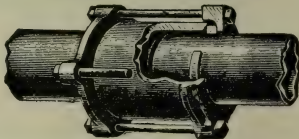
B1835

The ends of the Sleeves have perfectly fitted stuffing boxes supplied with rubber packing rings. They are especially for use on natural gas lines, where the threads on the pipe or coupling do not make a perfectly tight joint. Our Sleeves will take the place of couplings and make a better joint, or can be used over the couplings. No better expansion joint can be made than our Sleeve. The Long Solid, size 1 inch to 4 inch inclusive, and the Short Solid 6 inches and larger, are for a working pressure of 500 pounds or less. The others are for any working pressure under 1,500 pounds.

"EUREKA"  
COUPLING

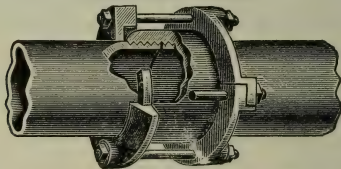
B1836

"INDIANA" COUPLING



B1837

COUPLING CLAMP



B1838

## PRICE EACH

Pipe Size.....inch	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	3	4	6	8	10	12
Split Sleeve.....	....	....	....	....	....	7.00	8.00	15.00	20.00	30.00	....
Solid Sleeve .....	....	1.00	1.50	2.00	2.50	5.00	6.00	9.00	15.00	22.00	24.00
Eureka Coupling....	.50	.60	.65	.70	1.05	....	....	....	....	....	....
Indiana " .....	....	.75	1.00	1.25	1.50	2.00	3.50	5.00	6.50	8.00	12.00
Coupling Clamp ....	....	....	....	....	....	1.50	2.00	3.00	4.00	5.00	....

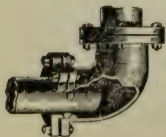
Casing Sizes.— $4\frac{1}{4}$  inch, use 4 inch list; for  $5\frac{1}{8}$  inch and  $6\frac{1}{4}$  inch, use 6 inch list.

Extra Long Solid Sleeves, 6, 8 and 10 inch quoted on application.

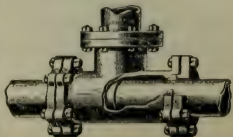
Solid Sleeves tapped in side for pipe, makes a convenient T. Prices on application.

Sleeves and Clamps for cast iron pipe quoted on application.

Watson Extra Heavy Ells, 45° Ells, Tees, Crosses and Gate Valves, quoted on application.



B1839



B1840

# NATURAL GAS STOVE BURNERS

"WINDSOR"

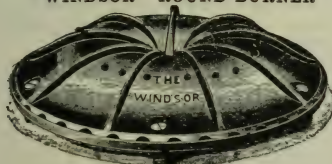


B1850

Made with end or bottom opening, for 1-inch or 1¼-inch Mixer.

Length.....inches	12	14	16	18	20
Price.....each	1.00	1.30	1.40	1.50	1.60

## "WINDSOR" ROUND BURNER

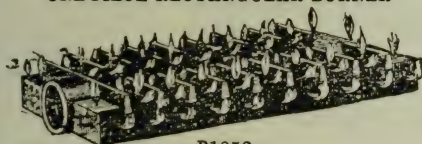


B1851

With bottom opening for 1-inch or 1¼-inch Mixer.

Diameter.....inches	4	6	8	10	12
Price.....each	.50	1.00	1.50	2.00	2.50

## ONE-PIECE RECTANGULAR BURNER



B1852

Number.....	1	2	3	4	5	6
Size of Burner.....inches	4x12	4x14	4x16	4x18	5x20	6x22
Price.....each	1.25	1.50	1.75	2.00	2.25	3.00

End and center inflow, 1¼-inch unless otherwise ordered.



## COMBINATION BURNER

B1853

Can burn wood or coal on top of burner.

Tapped end or center for 1-inch Mixer.

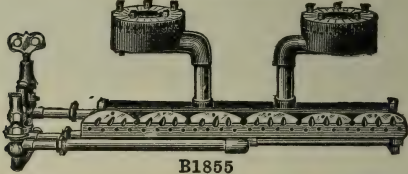
Length.....inches	12	14	16	18	20
Price.....each	1.00	1.30	1.40	1.50	1.60

## ROUND COMBINATION BURNER. Tapped in Bottom. B1854

Diameter.....inches	6	8	10	12
Price.....each	1.00	1.50	2.00	2.50

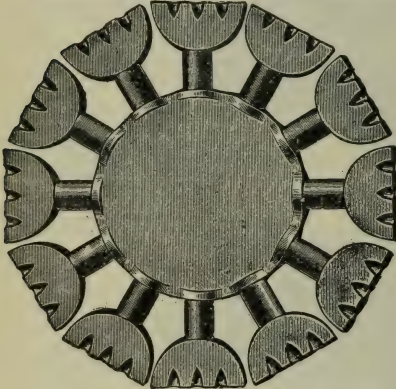


**BURNERS**  
**CALORIFIC THREE-WAY BURNER**  
4 1/4 Inches Wide



**B1855**

When ordering, state whether right hand or left hand burner is wanted. Cut shows right hand. Valves being at right hand side when placed in stove.  
Complete as shown, each: 14 inch, \$6.00; 16 inch, \$6.50.



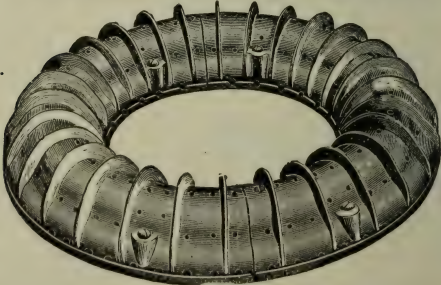
**CALORIFIC FURNACE BURNERS**

**B1856**

7, 8, 9 or 10 inch.....each	4.50
11, 12, 13 " 14 " .....	5.00
15, 16, 17 " 18 " .....	6.00
19, 20, 21 " 22 " .....	8.00
23, 24, 25 " 26 " .....	10.00
27, 28, 29 " 30 " .....	15.00
31, 32, 33 " .....	20.00
34, 35, 36 " .....	25.00

Burners should be 4 inches smaller diameter than the grate bars of furnace.

**WINDSOR FURNACE BURNERS**

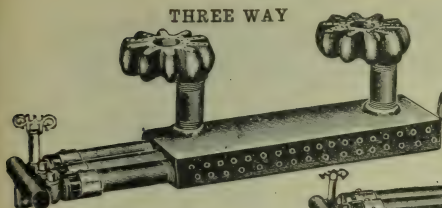


**B1857**

No. 16, 16 inches in Diameter, in 2 Sections, Tapped, 1 1/2.....each	6.00
" 18, 18 " " " " 2 " " 1 1/2.....	8.50
" 20, 20 " " " " 3 " " 1 1/2.....	10.00
" 22, 22 " " " " 3 " " 2 .....	12.00
" 24, 24 " " " " 3 " " 3 .....	13.50

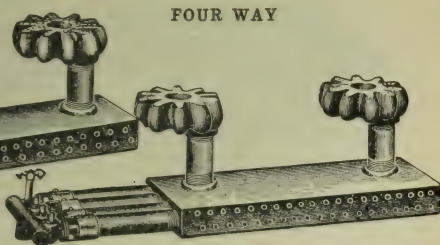
# STAR BURNER

THREE WAY



B1858

FOUR WAY



B1859

12 inch Three Way.....each	5.00	12 inch Four Way.....each	6.00
14 " " " " " "	5.50	14 " " " " " "	6.50
16 " " " " " "	6.00	16 " " " " " "	7.00
18 " " " " " "	6.50	18 " " " " " "	7.50
20 " " " " " "	7.00	20 " " " " " "	8.00

No. 1



## MONITOR BURNERS

B1860

No. 1 .....	per dozen	3.00
-------------	-----------	------

No. 1 has brass stem.

No. 2, All Iron.....	per dozen	12.00
No. 3, " " " " " "	"	16.00

## MONITOR BURNER STAND

B1861



Per Dozen.....	6.00
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## HORSESHOE BURNER

B1862

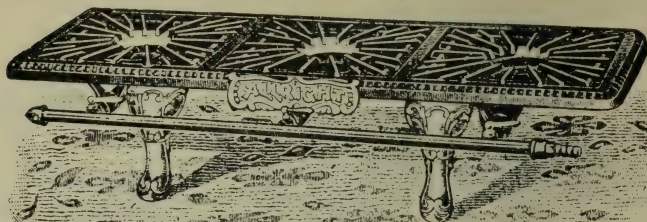
For 3/4 Inch Burner



Price, 6 Inch.....	each	.75
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See Special Valve and Mixer for Horse Shoe Burner, B1884.

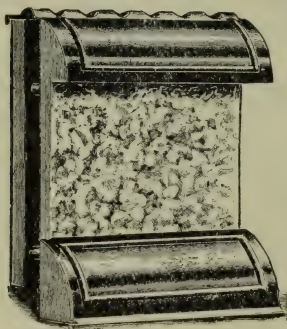
## GAS HOT PLATES



B1863

State whether wanted for Natural or Artificial Gas.

Three Burners.....	each	3.50
Two ".....	"	2.50
One Burner.....	"	1.25



## PITTSBURG GAS STOVE

B1864

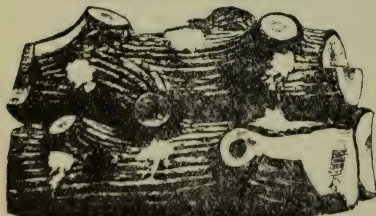
Price each, \$7.50.

For Natural Gas.

Dimensions, 20 x 26 in. high.

Black Iron.

## THREE STICK PATTERN



## TERRA COTTA GAS LOG

B1865

For factory shipment only.

Price per inch (length), 75c.

Tapped in bottom for mixer.

State whether for Natural or Artificial Gas.



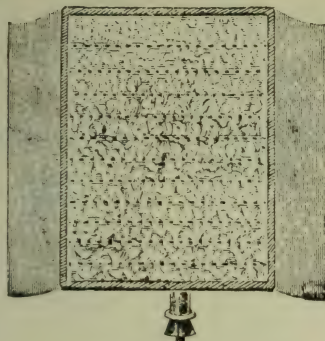
## POTTERY STILTS

B1866

Per bbl., \$6.00.

For factory shipment only.

**BACK WALL  
BURNER**



**FOR OPEN  
GRATE**

**B1870**

When ordering, state width and height of fireplace opening.  
Brass fender for bottom of burner is extra

**PRICES INCLUDING MIXER**

Width of Grate opening.....inches	18	20	22	24
Price, with Polished Brass Side Flanges.....each	5.50	5.50	5.70	5.90

When ordering burner state width and height of opening of the fireplace frame.

**BRASS FENDERS FOR  
GAS FIRES**

Polished Brass. Height, 9 inches



**B1871**

Length.....inches	18	20	22	24	26
Price.....each	1.60	1.60	1.60	1.80	2.00



**E1372**

**PERFECTION STEEL BURNER**

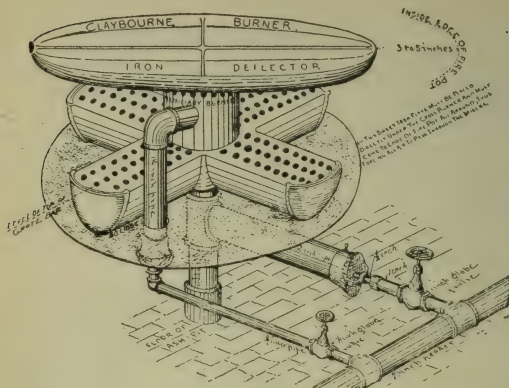
14 inch to 26 inch Lengths  
each 80c.

Asbestos Boards, 40 x 40 inches (see Packing).

Asbestos Fibre in bulk, per Pound, 70c.

Fire Proof Glue, Pint, 35c.; Quart, 50c.; Gallon, \$1.50.





## CLAYBOURNE BURNERS

### CHICAGO FURNACE BURNER

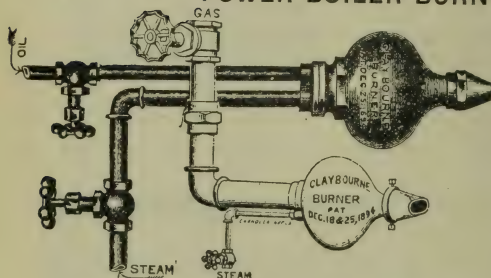
for Natural or Fuel Gas

B1875

Price, including Mixers,  
\$10.00.

Valves are extra.

## POWER BOILER BURNERS



### OIL BURNER, B1876

Price, \$25.00.

(Valves not included.)

### GAS BURNER, B1877

Price, \$25.00.

(Valves not included.)

## BOILER BURNERS

(Gas)

With Natural Draft and Improved  
Patent Mixer

Price each, \$2.50.

Including 2-inch Mixer.

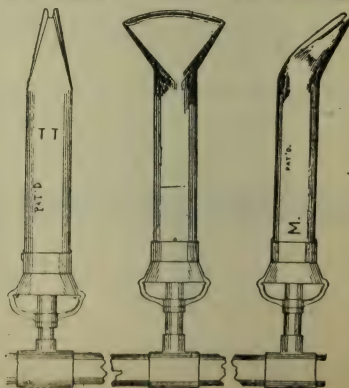
## CLAYBOURNE APPLIANCES

are intended for the economical  
use of Gas and Oil Fuel.

If interested, please state requirements  
fully.

### T BURNER

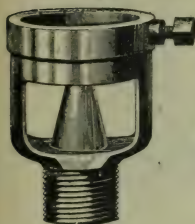
### 45° BURNER



B1878

**GAS MIXERS**

**No. 0  
OPEN SIDE**



**B1880**

**Rough**

**No. 8  
KITTANNING  
Solid**



**B1881**

**Rough**

**SHIELD AND  
SLIP PIN**



**B1882**

**Nickel Plated**

**No. 16  
IRON SHIELD**



**B1883**

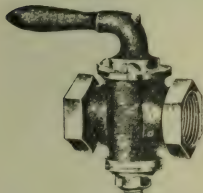
**As Illustrated**

1x $\frac{3}{8}$ inch.....	.25	1 x $\frac{3}{8}$ inch...	.40
1x $\frac{1}{2}$ " .....	.27	1 x $\frac{1}{2}$ " ...	.40
		1 $\frac{1}{4}$ x $\frac{3}{8}$ " ...	.50
		1 $\frac{1}{4}$ x $\frac{1}{2}$ " ...	.50
The No. 8 Mixer with Slip Pin, add	.05		
Set Screw in large end.....	.02		

1x $\frac{3}{8}$ inch.....	.75	2x1 inch. ....	.70
1x $\frac{1}{2}$ " .....	.75	<b>Cadman Iron Mixers</b>	
<b>Finished Only</b>		with Brass Slip Pin	
1x $\frac{3}{8}$ inch.....	.70	and Set Screws with-	
1x $\frac{1}{2}$ " ....	.70	out shield.	

For 1, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$  or  
2-inch pipes, 65c. 70c,  
75c, and 80c each.

**GAS STOVE COCK  
Brass**



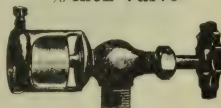
**B1885**

**With Check**

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Each.....	1.25	1.35	2.15

**COMBINATION  
MIXER AND VALVE  
(For Horse Shoe  
Burner B1862)**

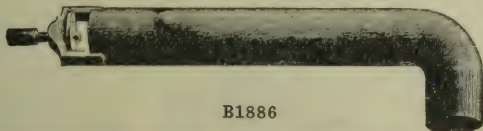
$\frac{3}{4}$ -inch Mixer with  
 $\frac{3}{8}$ -inch Valve



**B1884**

Per dozen, 10.00

**FURNACE BURNERS**



**B1886**

Each .....	1.50
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B1905

### SHORT KEY

For Lock Shield Valve

Plain Brass.....	each	.12
Nickel Plated.....	"	.18



### LONG T KEY

B1906

Length.....inches	3	6	9	12
For 1/4 inch } Finished.....each	.25	.35	.45	.55
Sq. Stem, } Nickeled..... "	.35	.50	.60	.75
For 1/2 inch } Finished..... "	.30	.45	.60	.75
Sq. Stem, } Nickeled..... "	.40	.60	.85	1.10

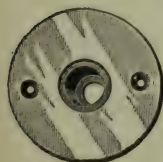
### ADJUSTABLE MALLEABLE IRON EXTENSION RODS

For Valves and Cocks with 1/4 and 1/2 Inch Square Stems



B1907

Length.....inches	6x9	9x12	12x15	15x18	18x21	21x24
Price.....each	.35	.40	.45	.55	.65	.75



### BRASS FLOOR PLATE

For Valve Stem or Rod

B1908

For 1/4 inch Sq. Stem, ea. Fin., 20c.; Nickel Plated, 30c.

For 1/2 inch Sq. Stem, same price as above.



### GAS STOVE TUBING NIPPLES

B1909

Brass, Male or Female Thread

Pipe Thread, 3/8 in., each, 25c.; 1/2 in., each, 30c.



**COVERED TUBING****MOHAIR TUBING**

With Metal Connections for Drop  
Lights, etc.



B1918

In 4 to 12 foot lengths.

Drop Light Tubing. Per foot, 12c.

Cigar Lighter Tubing, 18, 24, and  
36 in. lengths.

Each, 40c., 50c., 70c.

With Rubber Sockets for  
Gas Stoves



B1919

In 2 to 12 foot lengths.  
Per foot, 10c.

Two foot or 3 foot lengths are figured  
as 4 feet.

**RUBBER TUBING**

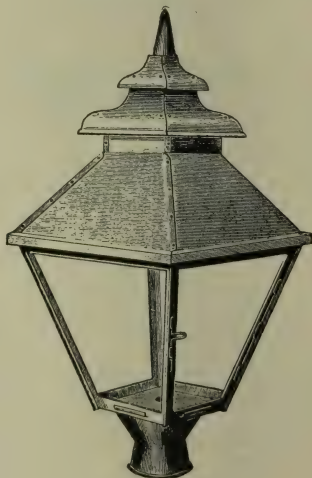
B1920

See Rubber Hose, etc., in this catalogue.

**GAS FITTER CEMENT**

B1921

Price per pound, 20c.

**STREET LAMP**  
For Natural Gas

B1923

Made with socket for wood post, or  
with socket to slip onto 2 inch iron pipe.

Price, including glass, \$6.00.

Can be used with Jumbo, Argand, or  
Incandescent Burners.

**BRASS GAS FIXTURE FITTINGS**

**L BURNER  
COCK**



**B1950**

**TWO LIGHT  
PENDANT COCK**



**B1951**

**L PENDANT  
COCK**



**B1952**

Per Dozen		Per Dozen		Per Dozen	
$\frac{1}{2}$ inch.....	6.20	$\frac{3}{8}$ X $\frac{3}{8}$ inch.....	10.25	$\frac{3}{8}$ X $\frac{3}{8}$ inch.....	5.85
$\frac{3}{8}$ ".....	5.20	$\frac{3}{8}$ X $\frac{1}{4}$ ".....	9.10	$\frac{3}{8}$ X $\frac{1}{4}$ ".....	5.20
$\frac{1}{4}$ ".....	4.55	$\frac{3}{8}$ X $\frac{1}{8}$ ".....	9.10	$\frac{3}{8}$ X $\frac{1}{8}$ ".....	5.20
$\frac{1}{8}$ ".....	4.25	$\frac{1}{4}$ X $\frac{1}{4}$ ".....	9.10	$\frac{1}{4}$ X $\frac{1}{4}$ ".....	5.20
$\frac{3}{8}$ or $\frac{1}{4}$ in., 4 in. long.	8.25	$\frac{1}{4}$ X $\frac{1}{8}$ ".....	8.45	$\frac{1}{4}$ X $\frac{1}{8}$ ".....	4.90
		$\frac{1}{8}$ X $\frac{1}{4}$ ".....	8.45		

Can be furnished Oxidized Copper Finish, to order.

**PILLAR COCK**



**B1953**

**STRAIGHT COCK**



**B1954**

**BRACKET SWING  
COCK**



**B1955**

Per Dozen		Per Dozen		Per Dozen	
$\frac{1}{2}$ inch.....	5.20	$\frac{1}{2}$ X $\frac{1}{2}$ inch.....	6.20	$\frac{3}{8}$ X $\frac{3}{8}$ inch.....	9.10
$\frac{3}{8}$ ".....	4.55	$\frac{3}{8}$ X $\frac{3}{8}$ ".....	4.90	$\frac{3}{8}$ X $\frac{1}{4}$ ".....	8.45
$\frac{1}{4}$ ".....	4.25	$\frac{3}{8}$ X $\frac{1}{4}$ ".....	4.55	$\frac{3}{8}$ X $\frac{1}{8}$ ".....	8.15
$\frac{1}{8}$ ".....	3.90	$\frac{1}{4}$ X $\frac{1}{4}$ ".....	4.55		
		$\frac{1}{4}$ X $\frac{1}{8}$ ".....	4.25		
		$\frac{1}{8}$ X $\frac{1}{4}$ ".....	3.90		

Can be furnished Oxidized Copper Finish, to order.

**HOSE COCK**



**B1956**

**INDEPENDENT  
COCK**



**B1957**

**STRAIGHT  
NOZZLE**



**B1958**

**SIDE  
NOZZLE**



**B1959**

**STIFF JOINT**



**B1960**

Per Dozen	Per Dozen	Per Dozen	Per Dozen	Per Dozen
$\frac{1}{2}$ inch .... 5.55	$\frac{3}{8}$ inch .... 6.50	$\frac{1}{2}$ inch.... 3.00	$\frac{3}{8}$ inch.. 2.60	$\frac{1}{2}$ X $\frac{1}{2}$ in.... 3.25
$\frac{3}{8}$ " .... 4.90		$\frac{3}{8}$ " .... 1.95	$\frac{1}{4}$ " .. 1.65	$\frac{1}{2}$ X $\frac{3}{8}$ , 4 or in., 2.60
$\frac{1}{4}$ " .... 4.55		$\frac{1}{4}$ " .... 1.65	$\frac{3}{8}$ " .. 1.00	$\frac{3}{8}$ X $\frac{3}{8}$ in.... 1.95
With Male Thread		$\frac{1}{8}$ " .... 1.00		$\frac{3}{8}$ X $\frac{1}{4}$ " .... 1.85
$\frac{1}{2}$ inch Male. 5.55	Can be furnished Oxidized Copper Finish. to order.			$\frac{3}{8}$ X $\frac{1}{8}$ " .... 1.55
$\frac{3}{8}$ " " 5.20				$\frac{1}{4}$ X $\frac{1}{4}$ " .... 1.50
$\frac{1}{4}$ " " 4.90				$\frac{1}{4}$ X $\frac{1}{8}$ " .... 1.40
				$\frac{1}{8}$ X $\frac{1}{8}$ " .... 1.40

## BRASS GAS FIXTURE FITTINGS

Quoted on application.

REVOLVING  
PENDANT  
COCK

B1961

UNIVERSAL  
PENDANT  
COCK

B1962

UNIVERSAL BRACKET  
SWING COCK

B1963

UNIVERSAL  
SWING

B1964

MIDDLE SWING TOP  
SWING

B1965



B1966

BRACKET BODY



B1967

PILLAR BODY



B1968

CONNECT-  
ING BALL

B1969

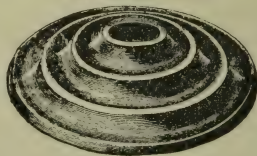
Can also be furnished in Oxidized Copper Finish, to order.

BRACKET BACK



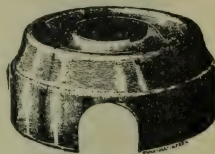
B1970

CEILING PLATE



B1971

BOX PLATE



B1972

2½ in. Diam.....doz.	.40	2½ in. Diam.....doz.	.60	2½ in. Diam.....doz.	2.00
3 " " " " " "	.60	3 " " " " " "	1.00		
4 " " " " " "	1.25	4 " " " " " "	2.00		

Brass or Oxidized Copper Finish.

BURNER CUP



B1973

GLOBE HOLDER



B1974

Stamped.....per dozen	.20	4 inch.....per dozen	1.10
Polished....." "	.30	5 " " " " " "	1.25

Brass or Oxidized Copper Finish.

## BRASS CASING

For Gas Fixtures



B1976

½ in. to cover ⅝ in. Pipe. ¾ in. to cover 1 in. Pipe.  
 ¾ in. to cover 1 in. Pipe.

Price, \$1.00 per pound.

**COMMON ROUND GAS BRACKETS**

FINISHED GILT, OR OXIDIZED COPPER

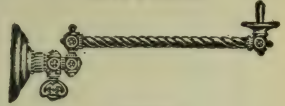
**STIFF**



B1977

Price.....each .65

**ONE SWING**



B1978

Price.....each .85

**TWO SWING**



B1979

Price.....each 1.30  
Universal Bracket.... " 1.85

**THREE SWING**



B1980

Price.....each 1.85  
Universal Bracket.... " 2.35

**SQUARE POLISHED BRACKETS**

POLISHED BRASS OR OXIDIZED COPPER FINISH

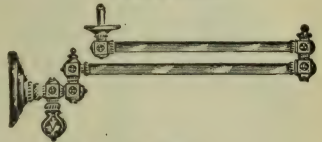
**ONE SWING**



B1981

Price.....each 1.50

**TWO SWING**



B1982

Price.....each 2.10

**STIFF BRACKET—Not Illustrated**

Price.....each .95

**3-SWING BRACKET—Not Illustrated**

Price.....each 2.75

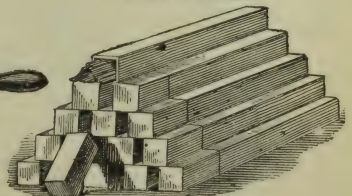
**TAPER SLIDE AND KEY**



B1983

Key..... per doz. 6.00

**WAX TAPERS**

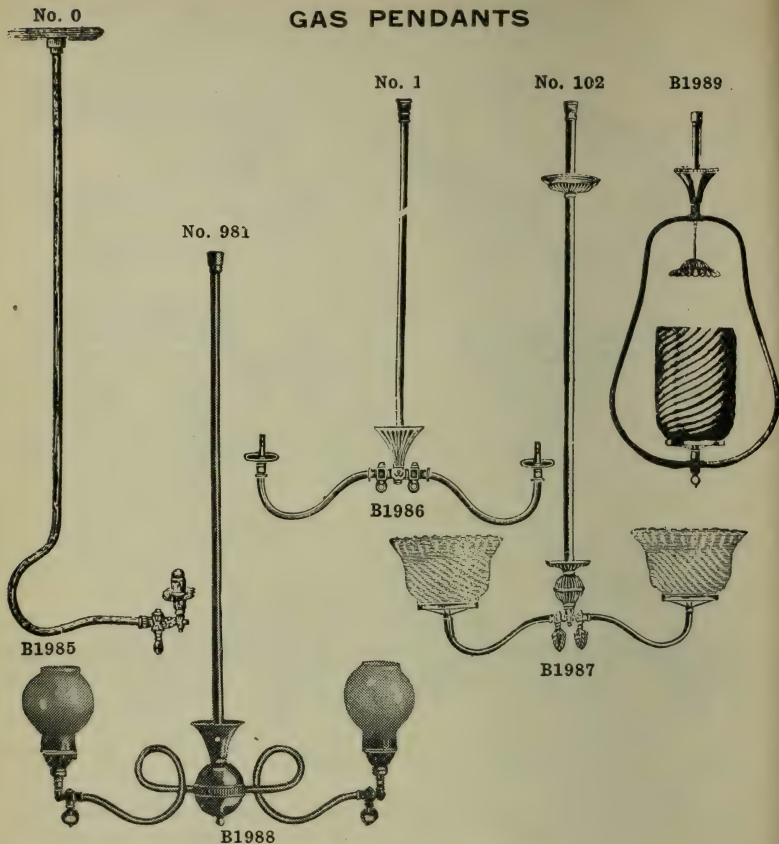


B1984

Per box..... .15



## GAS PENDANTS



## BRASS OR OXIDIZED COPPER FINISH

B1985	One	Light, 30 inch drop	.....	each	1.50
"	"	36 " "	.....	"	1.75
B1986	Two	" 36 " " 18 inch Spread	.....	"	3.00
"	Three	" 36 " " 9 " Arms	.....	"	4.00
B1987	Two	" 36 " " 18 " Spread	.....	"	4.00
"	Three	" 36 " " 9 " Arms	.....	"	5.00
B1988	Two	" 36 " " 20 " Spread	.....	"	5.00
"	Three	" 36 " " 10 " Arms	.....	"	6.00
B1989	One	" 30 or 36 inch drop, Hall Light	.....	"	4.00

Glassware, Burners, Ceiling Plates, Cups and Tips are extra.

# ILLUMINATING GAS BURNERS

BRASS  
PILLAR



B1990  
Per Gross  
2.00

LAVA  
TIP



B1991  
Per Gross  
2.00

BLIND  
PILLARS



B1991 1/4  
Per Gross  
4.00

EMPIRE



B1992  
Per Gross  
9.00

EMPIRE  
BASE



B1992 1/4  
Per Gross  
4.50

## NATURAL GAS BURNERS

IRON BURNER  
BATWING OR  
FISHTAIL



B1992 1/2  
Per Gross  
10.00

JUMBO



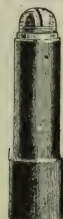
B1993  
Per Dozen  
1.50

JUMBO TIP



B1994  
Per Dozen  
.90

NEW MARKET



B1995  
Per Dozen  
1.00

SELF  
LIGHTING



B1995 1/4  
Per Dozen  
10.00

MATCHLESS  
BYPASS



B1995 1/2  
Per Dozen  
6.00

STORK  
NECK



B1996  
Per Dozen  
2.50

DROP LIGHT  
SOCKET



B1997  
Per Dozen  
2.50

CIGAR  
LIGHTER



B1998  
Each

As illustrated. ....2.00  
With 2-ft. Tubing,  
Goose Neck and  
Socket .....3.00

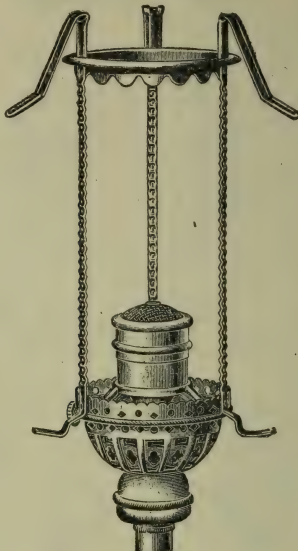
## INCANDESCENT BURNERS

No. 2 B  
GALLERY BURNER



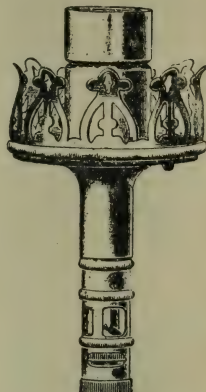
B2000

No. 1 B, POST BURNER



B2001

No. 3 B  
BURNER



B2002

Per Dozen .....	1.40	Per Dozen .....	1.75	Per Dozen .....	3.00
" 100 .....	10.50	" 100 .....	13.50	" 100 .....	22.50

No. 84 B



B2003

No. 71 B



B2004

## WELSBACH BURNERS

Improved needle-valve gas adjustment.  
Bright dipped finish.

Per dozen, \$2.40. Per 100, \$18.40.

Above for use with 2 inch glassware. By means of No. 66 deck plate all styles of standard or air-hole glassware may be used.

A new Burner, with improved center-hole regulating buisen.

Per dozen, \$5.00. Per 100, \$39.00.

WELSBACH BOXED LIGHTS



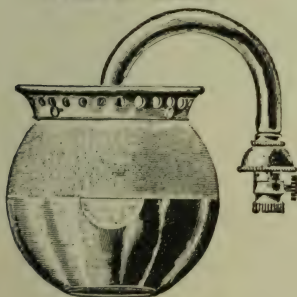
B2005

Boxed complete with No. 310 cylinder.  
No. 196 Junior J Brand Welsbach mantle.  
No. 316 new crimped cone opal shade.

Price, complete, doz. lots....each	1.35
" " 100 " .... "	1.25

No. 316, Opal shades only, per doz. \$4.40.  
P'k'ge, 16 doz. shades, @ \$4.00 per doz.

IMPROVED  
INVERTED LAMPS



B2008

Boxed complete.....each	2.00
Extra Mantles....."	.50
Extra Globes....."	.60



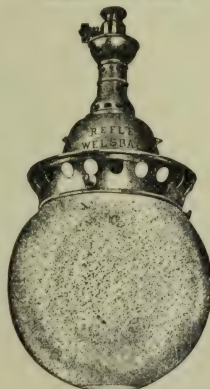
B2006

Boxed complete, with No. 302 opal globe.  
No. 197 J Brand Welsbach mantle.

Price, complete, doz. lots....each	1.10
" " 100 " .... "	1.00

Price list, No. 302 Globe, see B2023.

WELSBACH "REFLEX" INVERTED  
LAMP, No. 244



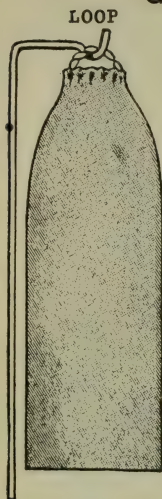
B2007

Boxed complete.....net. ea.	1.75
Extra Mantles....." doz.	3.25
" Globes, 5-in., No. 442 " "	2.75
" Inner Cylinder No. 317 " "	2.75

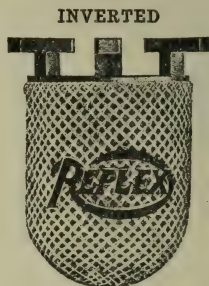
No. 317, Cylinder, Opal or Roughed,  
add dozen, 25 cents.



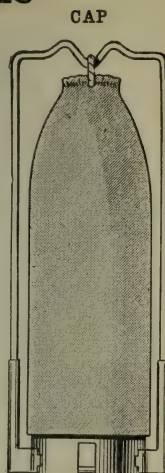
## GAS AND GASOLINE MANTLES



B2010



B2013

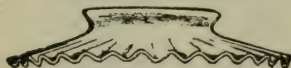


B2012

				Per Doz.	Per 100
Atlas	Loop	Mantle, Single Weave	.....	1.40	10.00
"	Cap	"	.....	2.00	15.00
Garland	"	"	.....	2.70	18.00
Empire	"	Double Weave	.....	2.70	18.00
"	Loop	"	.....	3.15	22.50
King	Cap	"	.....	3.50	25.00
Reflex	Inverted	Triple Weave	.....	3.00	20.25
Improved	"	"	.....	3.00	20.25
"	"	Single Weave	.....	2.70	18.00
No. 2L	Gasoline	"	3½" Gravity.....	2.00	15.00
" 26L	"	Double Weave	"	2.70	18.00
" 55L	"	"	4½" Pressure.....	3.15	22.50
" 56L	"	"	"	3.00	21.00

## OPAL SMOKE SHADE

## No. 74, OPAL SHADE



B2015



B2016

	Per Doz.
Broken Package .....	1.80
Original " .....	1.65

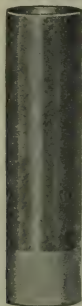
	Original Package	Broken Package
6-inch..... per doz.	1.30	1.55
7- " .....	1.50	1.80
8- " .....	1.70	2.00

Original package contains 6 dozen.

Boxing on Glassware, extra, at cost.

GLASSWARE FOR INCANDESCENT GAS BURNERS

FROST BOTTOM  
CHIMNEY



B2019

Price Per Dozen

8-inch .....	1 30
7 " .....	1 25
6 " .....	1 20

If in original package,  
6 dozen.  
Per doz. 8-in., \$1.10; 7-in.,  
\$1.05; 6 in., \$1.00.

No. 201 CYLINDER



B2020

For Post Frame

Per Dozen, \$1.50.

If in full package of 6  
dozen, per doz., \$1.30.

No. 66 GLOBE



B2021

4½-inch

Opal or Acid-roughed Top  
and Bottom.

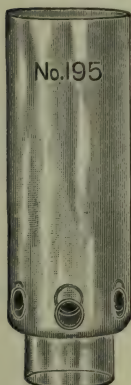
Per dozen, \$1.25.

If in full package (6 doz.),  
per dozen, \$1.10.

5-inch Globes special.

AIR-HOLE GLASSWARE

No. 195



B2022

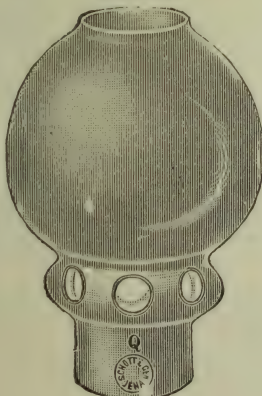
Clear Glass

No. 195, Cylinder

Per dozen, \$2.40.

If in full package (30 doz.),  
per dozen, \$2.20.

Q GLOBE



B2023

Q Air-Hole Opal

Per dozen, \$2.80.

In 6 dozen packages, at  
\$2.60.

MICA ARGAND  
CHIMNEY



B2024

One Piece

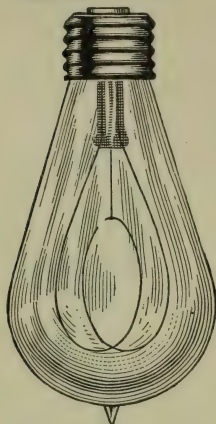
6-inch.....per doz.	4.00
7 " .....	5.50
8 " .....	6.25

Boxing on Glassware, extra, at cost.

## INCANDESCENT LAMPS

EQUALITY TYPE

SHELBY TYPE



B2030



B2031

Candle Power	Voltage	Std. Pkg.	Clear	Frost
2 to 25	45 to 130	240	.20	.225
32 and 50	45 to 130	100	.30	.33
8, 10, 16, and 25	20 to 45 & 200 to 250	240	.22	.245
32 and 50	20 " 45 " 200 " 250	100	.40	.43

Add 2½c. per lamp for T. H. West. or Comb. Base.

## "HYLO"

8 and 16 Candle Power, 45 to 130 Volt, Clear	each	.60
8 " 16 " " over 130 " "	"	.65
32 " " " 45 to 130 " "	"	.70
32 " " " over 130 " "	"	.75

## "TANTALUM"

Regular, 40 Watts, Clear	.60
--------------------------	-----

## "GEM"

50-W, 103-110-112 Plain	.25	} No. 2. D Reflector & Holder	.70
" 103-110-112 Frosted	.275		
100-W, 103-110-112 Plain	.35		
" 103-110-112 Frosted	.38		
125-W, 103-110-112 Plain	.45	} " 3. D " " "	.90
" 103-110-112 Frosted	.485		
187-W, 103-110-112 Plain	.65	} " 4. D " " "	1.10
" 103-110-112 Frosted	.69		
250-W, 103-110-112 Plain	.80	} " 5. D " " "	1.30
" 103-110-112 Frosted	.85		

## WATER-PROOF SOCKET



B2032



B2033



B2034

List Number .....	9386	50760	List Number.. .....	9392	50768
Cap.....inches	$\frac{1}{8}$	$\frac{3}{8}$	Cap.....inches	$\frac{1}{8}$	$\frac{3}{8}$
Standard Package..	500	250	Standard Package....	500	250
Price, with Key each	.33	.39	Price, Keyless, each	.30	.36

List Number.....	9366	9388	1250
Description.....	Edison	Thomson-Houston	Westinghouse
Standard Package.....	250	200	200
Price.....each	.35	.35	.35

List Number.....	116½	117½	118½
Description.....	Edison	Thomson-Houston	Westinghouse
Cap.....inches	¾	¾	¾
Price.....per 100	50 00	50.00	50.00

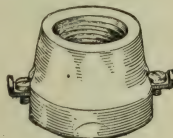
PORCELAIN RECEPTACLES  
Nos. 9171 and 50757



B2035



B2036



B2037

## PORCELAIN RECEPTACLES

List Number.....	9184	9185	9171	50757
Description.....	With Key	Keyless	Brass Fittings	Copper Fittings
Standard Package.....	250	250	500	250
Price.....each	.44	.40	.12	.20

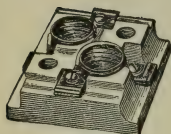


List Number .....	66327	66329	66331	66333	66335	66337	66339	66341
Amperes.....	3	6	10	12	15	20	25	30
Standard Package..	500	500	500	500	500	500	500	500
Price..... each	.09	.09	.09	.09	.09	.09	.09	.09



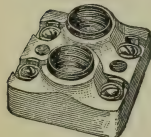
## EDISON PLUG CUT-OUTS

No. 8020



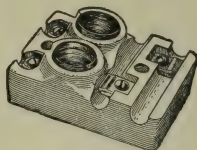
B2041

No. 2965



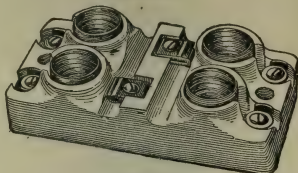
B2040

No. 1935



B2042

No. 2587



B2043

List Number ....	2569	2965	8020
Description .....	Single Pole Main	Double Pole Main	Double Pole Single or Double Cross Over Branch
Price.....each	.18	.30	.32

List Number...	1935	2587	2165	2199	8042	2135
Description.....	Double Pole Single Branch	Double Pole Double Branch	3 Wire Main	3 to 2 Wire Double Branch	3 Wire Single Branch	3 Wire Double Branch
Price.....each	.32	.62	.44	.64	.54	.90

## P. K. ROSETTES

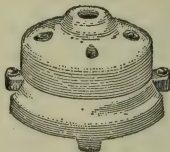
No. 810



B2045

Each, 26c.  
For Cleat Work.

No. 814



B2046

Each, 36c.  
For Concealed Work.

No. 815



B2047

Each, 36c.  
For Moulding Work.

## PORCELAIN INSULATORS

No. 4½



B2048

No. 5



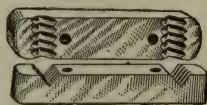
B2049

No. 5½



B2050

## PORCELAIN CLEAT



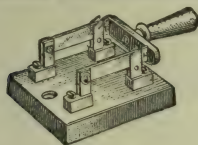
Quoted on application.

B2051

Number	Height Inches	Diameter Inches	Hole Inches	Groove Inches	Standard Package	Price Per 1000
4½	1¾	1½	¾	7/16	2000	14.00
5	1¼	1	¼	7/16	5000	9.00
5½	1¾	1	¼	7/16	5000	9.00

# SWITCHES

## DOUBLE POLE (Slate Base)



B2052

Type "B" Switches are made to conform to the requirements of the National Board of Fire Underwriters, are well made, substantial throughout, and insure a good contact.

They are made in Plain Finish, Front Connections only.

This is an All-Copper Switch at a medium price. These switches can be fitted for any of the Enclosed Fuses on the market, with or without Clips or Holders, as desired. Barrier will be inserted in Fuse Gap, when so ordered, at an additional cost of 15 per cent to list.

Amp.	Cat. No.	S. P.	Cat. No.	S. P. Fused	Cat. No.	S. P. D.T.	Cat. No.	S. P. Fused	Cat. No.	D. P.	Cat. No.	D. P. Fused	Volts
15	50	.40	54	.50	58	.64	62	.94	66	.53	70	.66	250
25	51	.55	55	.69	59	.88	63	1.30	67	.82	71	1.02	250

Amp.	Cat. No.	D. P. D.T.	Cat. No.	D. P. D.T. Fused	Cat. No.	3 P.	Cat. No.	3 P. Fused	Cat. No.	3 P. D.T.	Cat. No.	3 P. D.T. Fused	Volts
15	75	.84	79	1.24	83	.79	87	.98	91	1.26	95	1.84	250
25	76	1.30	80	1.92	84	1.23	88	1.54	92	1.96	96	2.88	250

## TYPE "B" SWITCHES

Fitted with National Electrical Code Fuse Holders

Amp.	Cat. No.	S. P. Fused	Cat. No.	S. P. D.T. Fused	Cat. No.	D. P. Fused	Cat. No.	D. P. D.T. Fused	Cat. No.	3 P. Fused	Cat. No.	3 P. D.T. Fused	Volts
15	36	.64	38	1.30	40	.94	42	1.90	44	1.40	46	2.90	250
25	37	.83	39	1.70	41	1.30	43	2.62	45	1.96	47	4.00	250

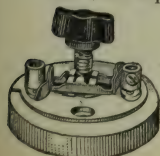
Double Break Switches, add 50 per cent.

Four Pole Switches, two and one-half times price of Double Pole.

110 Volt Spacing, same price as 250 Volt.

## PERKINS SWITCH-220 VOLT

With Composition Key



B2053

List No.	B No.		Standard Package	List Price
19520	2000	5 Ampere, Single Pole	500	.26
19521	2001	10 " " "	250	.33

**CORD ADJUSTERS**  
 No. 5400


B2055

List No. 5400 Universal Cord Spool, made of hard wood, natural finish....per 100	6.00
--	------

**SHADE HOLDERS**  
 No. 90282


B2056

List No. 90282 2 1/4 inch Shade Holder.....per dozen	1.20
List No. 90282A 3 1/4 inch Shade Holder...per doz.	2.00

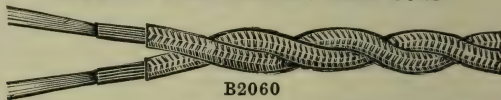
**WIRE GUARDS**  
 Closed No. 5929 Open


B2057

List No. 5929 Tinned....per dozen	2.00
-----------------------------------	------

Guard opens, allowing the removal of lamp without detaching from socket. Will stay open or closed; no hooks or springs to bother with.

**Fuse Wire** quoted on application. When ordering, state plainly for what purpose it is to be used.

**FLEXIBLE INCANDESCENT LAMP CORD**


B2060

Conductor Composed of No. 30 Wire. National Code Standard

B. & S. Gauge .....	22	20	18	16	14	12	10
No. of Wires to Conductor .....	10	14	16	25	40	60	118

Prices Cotton Covered or Silk Covered quoted on application.

**RUBBER COVERED WIRE**  
 National Code Standard

**SINGLE BRAID, SOLID**
**DOUBLE BRAID, SOLID**


E2061

B2062

B. & S. Gauge.....	18	16	14	12	10	8	6	5	4	3	2	1	0
Single or Double Braid, per 1000 feet	Prices on application.												

**WEATHERPROOF WIRE** — Soft Drawn Copper, Triple Braided

B. & S. Gauge.....	000	0	1	2	3	4	5	6	8	10	12	14	16	18
Approx. lbs., per 1000 feet	629	495	407	310	250	199	164	135	111	74	53	35	25	11

The market price of weatherproof wire changes frequently. Prices on application.

**FIRE AND W. P. WIRE QUOTED ON APPLICATION.**

**D. & W. ENCLOSED FUSES**

NEW NATIONAL ELECTRIC CODE STANDARD — 250 Volts

FOR SPRING CLIP

KNIFE BLADE PATTERN



B2065



B2066

**FOR SPRING CLIP B2065**

Length over all.....inches	2	2	2	2	2	2	2	2	3	3	3	3
Capacity.....amperes	3	6	8	10	15	20	25	30	35	40	50	60
Package.....quantity	100	100	100	100	100	100	100	100	100	100	100	100
Price.....each	.25	.25	.25	.25	.25	.25	.25	.25	.33	.33	.33	.33

**KNIFE BLADE PATTERN B2066**

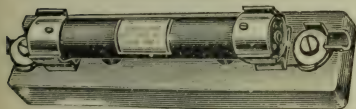
Length over all.....inches	5 <sup>7</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>
Capacity.....amperes	70	80	90	100	110	120	125	150	200
Package.....quantity	50	50	50	50	25	25	25	25	25
Price.....each	.86	.86	.86	.86	2.00	2.00	2.00	2.00	2.00

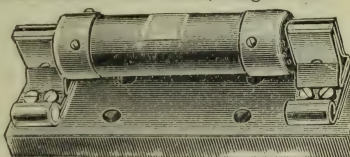
Length over all.....inches	8 <sup>5</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	.....
Capacity.....amperes	250	300	350	400	450	500	550	600	.....
Package.....quantity	25	25	25	25	10	10	10	10	.....
Price.....each	3.40	3.40	3.40	3.40	5.20	5.20	5.20	5.20	.....

**D. & W. STANDARD CUT-OUTS**

NEW NATIONAL ELECTRIC CODE STANDARD — 250 Volts, Single Pole

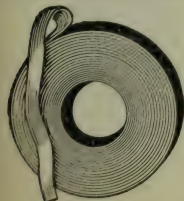


B2067



B2068

Length over all.....inches	2	3	5 <sup>7</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>
Capacity.....amperes	1-30	31-60	61-100	101-200	201-400	401-600
Package.....quantity	50	50	50	50	25	10
Price.....each	.50	.96	1.30	2.40	6.40	9.20



B2070

**TAPE**

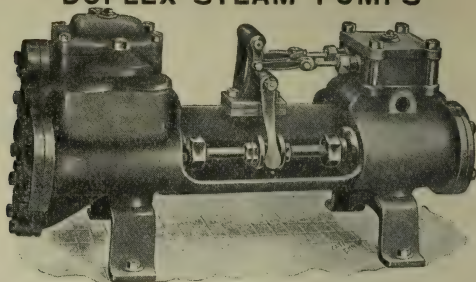
Friction Tape

Rubber Tape

Quoted on application.



## DUPLEX STEAM PUMPS



B2100

Largest sizes are with Air Chambers.

## BOILER FEED PUMPS—Piston Pattern

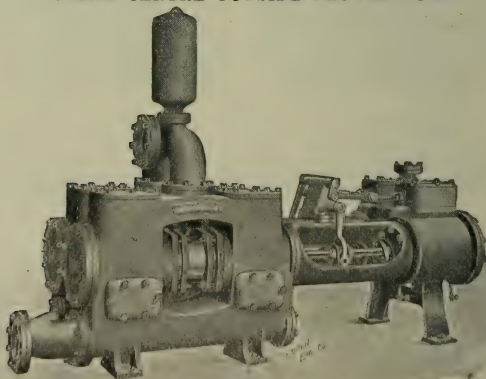
Price List also applies to General Service Pumps.

Number	Diameter of Steam Cylinder	Diameter of Water Piston	Length of Stroke	Price Standard Fitted	Price Brass Fitted	Number	Diameter of Steam Cylinder	Diameter of Water Piston	Length of Stroke	Price Standard Fitted	Price Brass Fitted
2	2½	1½	2½	45.00	48.00	7½	6	4½	6	160.00	175.00
3	3	2	3	60.00	65.00	8	7	4½	8	220.00	245.00
4	3½	2¼	4	80.00	85.00	9	8	5	10	320.00	355.00
5	4½	2¾	5	98.00	106.00	10	10	6	10	400.00	440.00
5½	4½	3	5	105.00	112.00	11	12	6	12	560.00	620.00
6	5¼	3½	6	125.00	137.00	12	12	7	12	600.00	665.00
7	6	4	6	150.00	165.00	13	12	8	12	680.00	750.00

For Boiler Feed Service, air vessels are omitted on the smaller sizes.

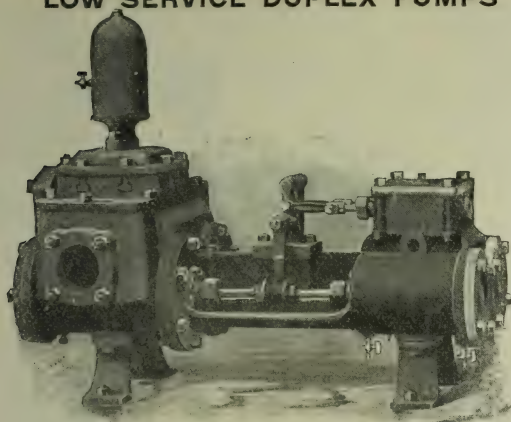
Automatic Pump and Receiver, Single Acting Pumps, Fire Pumps and Centre Outside Packed Pumps quoted on application.

## DUPLEX CENTRE OUTSIDE PACKED PUMP



B2101. Prices quoted on application.

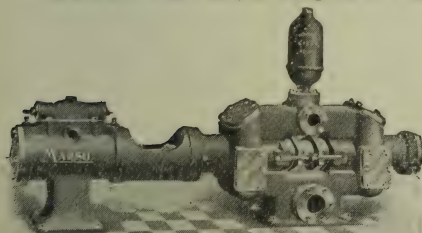
# LOW SERVICE DUPLEX PUMPS



B2103

Diameter of Steam Cylinder	Diameter of Water Pistons	Length of Stroke	Price Standard Fitted	Price Brass Fitted	Diameter of Steam Cylinder	Diameter of Water Pistons	Length of Stroke	Price Standard Fitted	Price Brass Fitted
3½	2¾	4	90.00	95.00	7	9	10	480.00	540.00
4½	3½	5	110.00	125.00	8	7	10	430.00	480.00
4½	4	5	115.00	130.00	8	8	10	470.00	530.00
5¼	4	6	125.00	140.00	8	9	10	520.00	590.00
5¼	4½	6	140.00	160.00	8	10	10	560.00	640.00
5¼	5	6	150.00	170.00	10	8	10	560.00	640.00
6	5	6	180.00	200.00	10	9	10	590.00	680.00
6	6	6	200.00	222.00	10	10	10	660.00	750.00
7	6	6	240.00	270.00	12	10	12	780.00	880.00
7	7	10	390.00	440.00	12	11	12	830.00	970.00
7	8	10	440.00	490.00	12	12	12	910.00	1030.00

# MARSH OUTSIDE PACKED PLUNGER PUMPS



B2105

Dimensions and prices furnished on application.

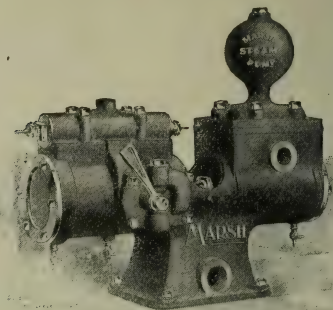
Special catalogue of Marsh Pumps furnished if desired.

These pumps are favored by many engineers for high pressure or boiler feed service, and for handling liquids containing grit. As all leaks are visible, a casual glance is sufficient to determine just how efficiently the pump is working.

In construction, the steam end is of the standard Marsh type, the water end is made very heavy and strong, ample hand plates being provided for access to all valve cham-

bers. The piston rods are of Tobin bronze, the plungers and glands of hard close-grained cast iron.

## MARSH STANDARD BOILER FEED PUMPS



B2106

## FOR HIGH PRESSURE. REGULAR LINE

Size	Steam Cylinder	Water Cylinder	Stroke	Gallons per Stroke	Gallons per Minute	Steam Pipe	Exhaust Pipe	Suction Pipe	Delivery Pipe	Floor Space	Horse Power	Weight Lbs.	Price
B	2½	1¾	2	.0128	3.33	¼	¾	¾	½	7x14	20	45	30.00
BB	3	1¾	2½	.0260	6.66	¾	½	1	¾	8x17	35	75	50.00
C	4	2¾	3	.0575	10.83	¾	¾	1¼	¾	10x21	60	170	75.00
C2	4	2½	6	.1275	16.66	¾	¾	2	1¼	10x32	100	300	125.00
D	5	3	3½	.1071	16.66	½	¾	1½	1	11x23	100	230	100.00
E	5	3	6	.1836	25.	½	¾	2	1¼	10x32	150	320	150.00
G	5½	3½	6	.2499	33.	¾	1	2	1½	12x34	200	400	175.00
F	6	3¾	8	.3574	45.	¾	1	2½	2	13x37	250	430	200.00
FF	6	4	8	.4352	58.	¾	1	2½	2	15x39	300	500	225.00
H	7	4	8	.4352	58.	1	1½	2½	2	15x39	350	525	250.00
I	8	5	10	.85	85.	1	1½	3½	2½	18x48	500	1100	325.00
II	8	5	12	1.02	100.	1	1½	4	3	18x52	600	1225	375.00
L	10	6	12	1.46	146.	1¼	1½	4	3	18x52	1000	1200	425.00
M	12	7¼	12	2.14	216.	1½	2	5	4	19x56	1500	1650	500.00
MM	12	8	12	2.61	260.	1½	2	5	4	19x56	1650	1650	525.00

Cast-iron Stand forming a drip pan, for sizes E, F, G or H Pumps, \$25.00. Other sizes special.

Capacity rating above is intended to represent maximum service recommended. It is always advisable to run pumps at moderate speed, consequently select sizes large enough to meet ordinary requirements easily.

Reserve power in your pump is quite as important as in your boiler or engine.

NOTE—Sizes from I to MM are furnished in double base type unless specially ordered with single base like above illustration.

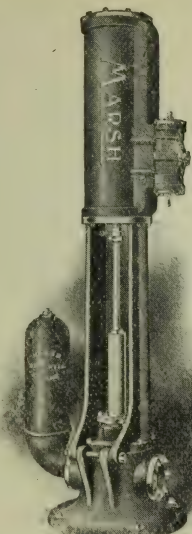
Low Service Boiler Feed Pumps, for Low Pressure Heating Service, Low Service or Tank Pumps, Automatic Pump and Receiver, Air Compressor, Vacuum Pumps, and Traction Engine Boiler Feed Pumps.

Description and prices furnished on application.

# MARSH DEEP WELL ENGINES

B2109 is similar to B2108, except has Hinged Base and Air Chamber as illustrated on B2110.

B2110 with Hinged Base and Air Chamber has also a displacement cylinder, which equalizes the work of the piston on the up and down strokes, and makes the delivery steadier by double action. This pump also has special rod connection which permits engine to be dropped over for access to well, without uncoupling the well rod.



B2108

B2108 PLAIN YOKE BASE

B2110

SIZE		Steam Pipe	Exhaust Pipe	Gas Pipe Well Rod Inches	Well Pipe	Delivery Pipe †	Floor Space	Weight Pounds	Price B2108	Price B2109	Price B2110
Diam. Steam Cylindr.	Stroke								Water Cylindr. Extra		
4	6	3/8	3/4	3/8	2	1 1/4	8 x 8	80	40.00	.....	.....
4	8	3/8	3/4	3/8	2	1 1/4	8 x 8	85	50.00	.....	.....
5	12	1/2	3/4	1 1/2	2 1/2	2	12 x 12	200	80.00	.....	.....
6	12	3/4	1	1 1/2	3	2 1/2	12 x 12	250	100.00	.....	.....
6	24	3/4	1	3/4	3	2 1/2	18 x 18	450	175.00	.....	.....
6	36	3/4	1	3/4	3	2 1/2	18 x 18	500	250.00	.....	.....
7	24	1	1 1/4	3/4	3	2 1/2	18 x 18	480	200.00	.....	.....
7	36	1	1 1/4	3/4	3	2 1/2	18 x 18	525	275.00	.....	.....
8	24	1	1 1/2	1	5	3 1/2	22 x 22	900	250.00	.....	.....
8	36	1	1 1/2	1	5	3 1/2	22 x 22	920	300.00	.....	.....

## HINGED BASE PUMPING ENGINES

6	*24	3/4	1	3/4	4	3 1/2	22 x 22	\$ 800	.....	225.00	250.00
7	*24	† 3/4	1 1/4	3/4	4	3 1/2	22 x 22	820	.....	250.00	275.00
8	*24	1	1 1/2	1	5	4	24 x 24	1150	.....	300.00	325.00
10	*24	1 1/2	2	1 1/2	6	5	30 x 30	1700	.....	350.00	400.00
12	*24	1 1/2	2	1 1/2	6	5	30 x 30	1875	.....	400.00	450.00
14	*24	2	2 1/2	1 1/2	7	6	32 x 32	2900	.....	575.00	625.00
16	*24	3	3 1/2	1 1/2	8	7	36 x 36	3150	.....	650.00	700.00

\* For 36-inch stroke add, to list of 6-inch and 7-inch sizes, \$75.00. 8-inch and larger sizes, \$50.00.

† Sizes apply to B2109. Diameter of plunger for B2110 is made according to order or requirements.

‡ For B2110 7x24 engine the steam pipe is 1-inch. In filling orders for engines only, flanges for well pipe and delivery will be threaded our standard sizes as above, unless otherwise specified

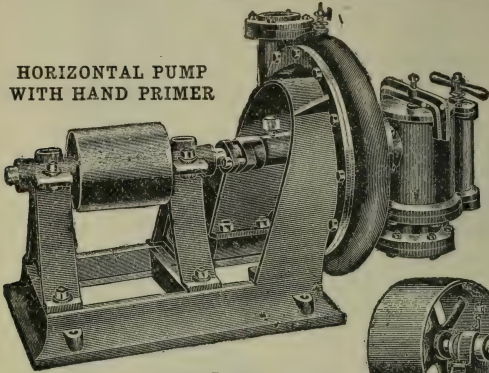
For capacity, etc., see special catalogue of Marsh Pumps.

§ Weights are for P2109. B2110 is approximately 20 per cent heavier.



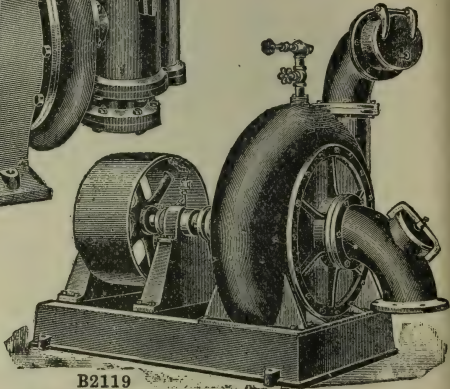
CENTRIFUGAL PUMPS

HORIZONTAL PUMP  
WITH HAND PRIMER



B2117

SAND AND  
DREDGING PUMP



B2119

PRICES HORIZONTAL CENTRIFUGAL PUMPS

Number	Suction Inches	Disch'rg Inches	Capacity Gallons	Pulley Inches	B2117 WITH PRIMER	B2118 WITHOUT HAND PRIMER	
					Price Iron	Price Iron	Price Brass
1½	2	1½	70	5 x 5	60.00	45.00	75.00
1¾	2½	2	90	6 x 5	75.00	60.00	100.00
2	3	2	120	6 x 6	95.00	75.00	140.00
2½	3½	2½	185	7 x 6	110.00	90.00	165.00
3	4	3	265	7 x 8	135.00	110.00	200.00
3½	4½	3½	360	8 x 8	145.00	120.00	230.00
4	5	4	470	10 x 8	160.00	130.00	250.00
5	6	5	735	10 x 10	200.00	165.00	410.00
6	8	6	1060	14 x 12	270.00	225.00	600.00
8	10	8	2000	20 x 12	375.00	310.00	.....
10	12	10	3000	24 x 12	.....	395.00	.....
12	15	12	4300	30 x 14	.....	500.00	.....
15	18	15	7000	Special	.....	850.00	.....
18	20	18	10000	Special	.....	1300.00	.....

Brass Fitted Pumps, quoted on application.

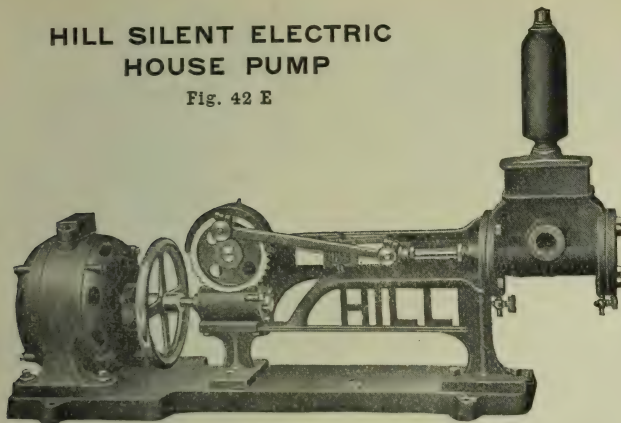
Vertical Submerged Pumps, quoted on application.

SAND AND DREDGING PUMPS—B2119

Number	Suction and Disch'ge Inches	CUBIC Y'DS SOLIDS PER HR. PER C'T OF SOLIDS		Pulley Inches	Horse-Power for Each 10 Feet of Elevation	Diameter of Solids Pump Will Pass Inches	Price Each
		10 Per Ct.	20 Per Ct.				
4	4	14	28	12 x 12	4	2	210.00
6	6	30	60	18 x 12	8	4½	300.00
8	8	60	120	24 x 12	15	6	475.00
10	10	90	180	30 x 14	25	8	600.00
12	12	125	250	40 x 16	30	10	850.00

# HILL SILENT ELECTRIC HOUSE PUMP

Fig. 42 E



B2120 1/2

Especially for domestic uses, but can be used for a variety of purposes. Dimensions over all: length, 3 ft. 10 in.; width, 15 in.; height, 28 in. at highest point.

No.	With D.C.* Motor, 110 or 220 Volts TYPE O	With A.C.+ Motor, 1 Phase, 60 Cycle, 110 or 220 Volts TYPE P	With A.C.+ Motor, 2 or 3 Phase, 60 Cycle, 110 or 220 Volts TYPE Q	Without Motor but with Sub-Base TYPE R	Without Motor or Sub-Base with Pulley TYPE S	Size of Motor	Size of Cylinder, Inches	Stroke, Inches	Elevation, Feet	Approx. Pressure Pounds	Capacity, Gallons	
											Per minute at 50 Rev.	Per hour
2B	170.00	200.00	170.00	80.00	70.00	1/2 H. P.	2	4	150	75	5	300
2 1/2 B	175.00	205.00	175.00	85.00	75.00	3/4 H. P.	2 1/2	4	100	50	8	480
3	180.00	210.00	180.00	90.00	80.00	1 H. P.	3	4	60	30	12	720

\*Direct Current. +Alternating Current.

Capacity is based on 1,800 R. P. M. Motors.

Cylinders are brass lined. Extra for air valve, \$2.50 net. A slight additional charge must be made in some cases for 500 volt motor. When ordering give Number and Type. And if with motor be sure to state voltage of electric current and if alternating current, also state phase and cycle.

2 and 2 1/2-in. cylinders are fitted for 1 1/4-in. suction and 1-in. discharge; 3-in. cylinders for 1 1/2-in. suction and 1 1/4-in. discharge—iron pipe.

Motor, sub-base and fly wheel can be left off and a pulley put on for belt drive if desired by any one that may already have his power installed. We believe the best results are obtained by pumping into either a closed (pneumatic) or open tank at certain intervals, when pump is run a sufficient length of time to fill the tank and then stopped. This can be attended to by means of automatic switching devices or by an attendant as desired.

This pump can be arranged so that an air valve (cut does not show it) can be attached to one end of pump cylinder, with which some air can be admitted to pump and forced with the water into the tank where it at once takes its place on top of the water. In the operation the water is thoroughly aerated.

## AUTOMATIC TANK SWITCHES

Double Pole Float Switch for open tanks. List price.....	\$20.00
Copper Float Pulleys, 15 ft. brass chain and weight .....	10 00
Attachment to operate switch by means of water pressure.....	12.00

## SPECIAL VERTICAL SMALL ELECTRIC PUMP

Quoted on Application.

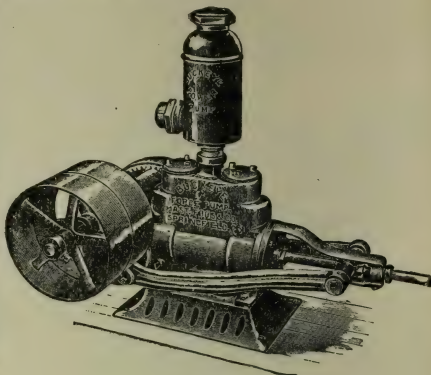
**BUCKEYE HORIZONTAL POWER PUMP**

FOR WELLS NOT OVER 25 FEET DEEP

No.	Bore	Stroke	Capacity per Revolution	Gear Ratio
105	3	4 $\frac{1}{4}$	.306	5 to 1
118	4	5	.544	5 to 1
134	5	5	.850	5 to 1
136	6	12	2.937	6 to 1

Size of Pulleys	Suction and Discharge	Iron	Brass Lined
16x3	1 $\frac{1}{4}$	50.00	56.00
16x3	1 $\frac{1}{2}$	55.00	63.00
16x4	2	60.00	70.00
20x5	3 $\frac{1}{2}$	135.00	150.00

Brass Valve Seats, Rubber-faced Valves, and Drain Cocks to prevent freezing.

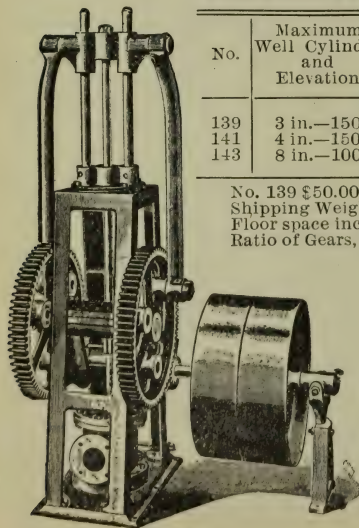
**B2121****SMALL FLOOR SPACE**

Can be run from ten to sixty revolutions per minute, according to the work required.

**BUCKEYE POWER WORKING HEAD  
WITH TIGHT AND LOOSE PULLEYS**

No.	Maximum Well Cylinder and Elevation	Stroke	Size Pulleys	Height to Center Pulley Shaft	Speed of Pulley Shaft
139	3 in.—150	5, 7 $\frac{1}{2}$ , 10	20 x 4 in.	12	210
141	4 in.—150	8, 10, 12	20 x 4 in.	14 $\frac{1}{2}$	180
143	8 in.—100	12, 16, 20	30 x 6 in.	19	150

No. 139 \$50.00, No. 141 \$75.00, No. 143 \$150.00.  
Shipping Weight 400 lbs., 600 lbs., and 1000 lbs.  
Floor space inches 10 x 18, 13 x 22 and 18 x 29.  
Ratio of Gears, six to one.

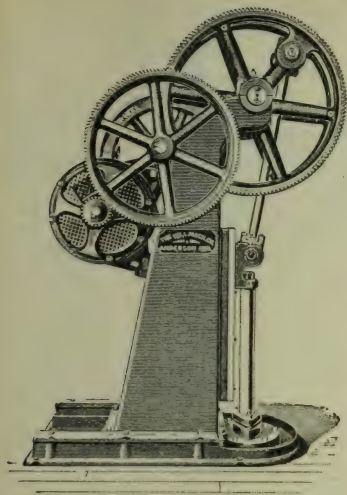
**B2122**

If water is to be forced to any considerable height above pump use air chamber.

Price of Air Chamber with Tee for connection in discharge pipe, with 2-in. Tee \$5.00, with 3-in. Tee \$10.00

The frame is hinged to the base and by disconnecting the piston rod just above the packing nut and removing the four cap screws which attach the frame to the base, the body of the pump can be hinged out of the way when removing the plunger rod and valves from the well.





## HILL ELECTRIC PUMPING HEAD

B2123

For Deep Wells

Direct Connected. Also made with Chain Drive

On the Chain Drive Head the motor is attached to a bracket in practically the same location as shown, and special silent sprocket wheels and chain are provided instead of the gear wheels illustrated.

This working head is also made if desired with Tight and Loose Pulleys for Belt.

### DIMENSIONS AND PRICE LIST, WITHOUT MOTOR

Stroke and No., Inches	Maximum Well Cylinder and Elevation		Gear Ratio	Size of Base, Inches	Height to Cen. Pinion Shaft, In.	Shipping Weight, Lbs.	Speed of Pinion Shaft	Horse Power Required	Price Without Motor	Net Extra for Balance Weights
	In.	Ft.								
8	4	150	6 to 1	14x18	21¼	500	240	¾ to 1½	\$120.00	\$ 4.00
12	5	150	6.8 to 1	21x38	31½	900	240	2 to 3	214.00	6.00
16	6	150	7 to 1	28x42	38½	1200	210	3 to 5	275.00	8.00
24	8	150	8 to 1	30x56	60	3000	200	7½ to 12	555.00	12.00

Note gear ratio and speed of pinion shaft to get rated strokes.

Price, including motor with raw hide pinion and attaching, quoted on application, with necessary information. Give electrical conditions.

## VERTICAL TRIPLEX PUMPS

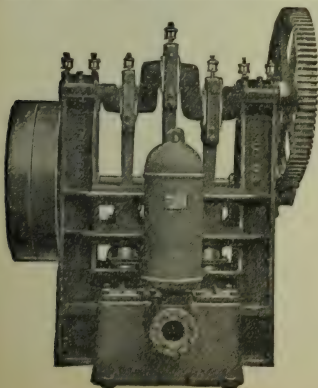
B2124

For All Purposes

For Liquids of All Kinds. Also for Air

With Tight and Loose Pulleys, also with Direct Connected Electric Motors

Prices quoted on application. State duty and requirements fully.





## WORKING HEADS

## STUFFING BOX HEADS



B2130

Brass, 3.00.

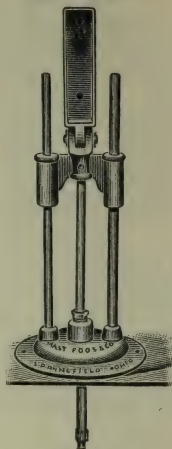


B2131

Iron, 6.00.

Stroke. 10 inch. Tapped 1, 1¼, 1½,  
or 2 inch.

## DEEP WELL



B2132

Iron, 10.00.

Fitted for 3, 3½, or 4-inch pipe.  
Piston rod is fitted with coupling for  
¾-inch pipe, but can be for wood or steel.  
Place a Tee below base for discharge.

## HEAVY PATTERN HEAD

With Discharge Tee above flange.  
16-in. stroke. For 3, 4, or 8-in. Suction.  
Each. 16.00, 25.00, 55.00.  
Discharge 2½, 3, and 6 in.

BULLDOZER  
POWER WORKING HEAD

For Deep Well Work

Price does not include cylinder.

Regular Size, No. 1.....	75.00
Extra Large Size, No. 2.....	150.00

Should run at not over 35 revolutions  
per minute, and less for deep wells.

Suction pipe is connected to flange  
under discharge opening. Valves and  
suction pipe can be withdrawn through  
base.

No. 1 is back geared 6 to 1, has 5, 7½,  
and 10 inch stroke. Discharge, 2½ inch  
or 3 inch. Suction any size, 2-inch to  
4-inch pipe, or 4¼-inch casing. Has  
24 x 4 inch pulleys.

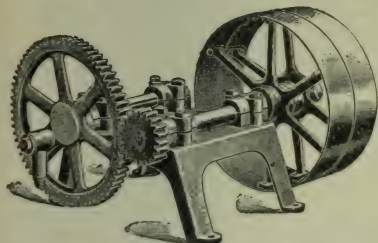
No. 2 is back geared 8 to 1, has 12, 16,  
and 20 inch stroke. Discharge, 4 inch. Suction, 8 inch or less. Valves and suction  
pipe can be withdrawn through base. Has pulleys 30 x 6 inch.

The Bulldozer is also made Horizontal, being complete with cylinder in body  
of pump. Prices on application.



B2133

## GEARED PUMPING JACK



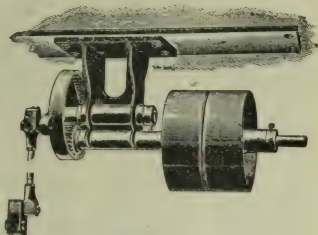
B2135

Price.....\$14.00

Geared four to one. Tight and Loose Pulleys are 3-inch face and 12-inch diameter. Adjustable Stroke, 5, 6½ or 8 inches. An extra link for Wood Rod is also furnished.

## GEARED COUNTERSHAFT

With 12-inch Tight and Loose Pulley

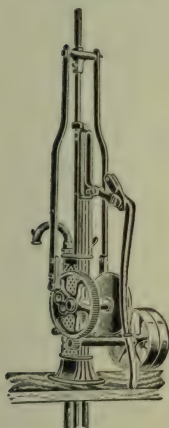


B2136

No. 1 Geared two and half to one. \$20.00  
 " 2 " five to one..... 27.00  
 " 1 has 4, 6, 7½ and 11 inch strokes.  
 " 2 " 6, 8, 10 " 12 " "

As a pump should run at 40 strokes per minute, the pulleys on No. 1 should run at 100 and the No. 2 at 200 revolutions per minute. Can be hung as shown, or attached to upright post, or set on platform.

## BUCKEYE JR. PUMP JACK

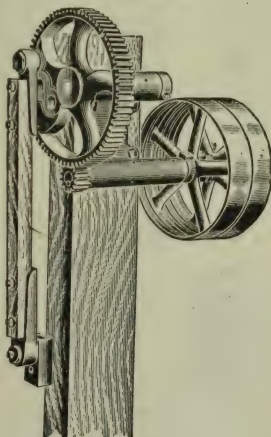


B2137

Jack only, without Pump Standard.....\$18.00

Attachable to any ordinary pump. Geared back six to one. Has 2 x 12 inch tight and loose pulleys.

## BUCKEYE POST JACK



B2138

Jack with six feet Wood Rod.....\$16.00

Geared back six to one. A most satisfactory method of connecting belt power to a pump when located in a building.





## 1 X L GALVANIZED STEEL TUBING

For Use with Steel Curbs

RESER-  
VOIR  
TUBING

B2147

FUNNEL PLAIN TUBING  
TUBING



B2148

RESER-  
VOIR  
WITH  
FUNNEL



B2149



B2150

## CISTERN CURBS

WOOD CURB—B2145

With Castings, 3.00.

Wood Tubing, see page 380.

## STEEL CURBS—B2146

(Not Illustrated.)

## Galvanized

"I X L" Size Curb and Fixtures.....	4.00
"Gem" " " " "	3.00

Iron Platforms: IXL, 6.00; Gem, 1.25.

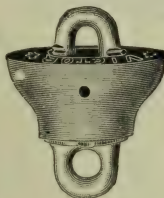


B2152

Per Pound, \$0.10.

## GALVANIZED CHAIN

### For Pumps



**B2153**

Per Dozen,  
1.25.



RUBBER  
BUCKET

**Especially  
for  
Steel Pumps**

Per Dozen, 1.25.

**Reservoir Tubing** is made in lengths of 5, 6, 7, 8 9, and 10 feet.

**Funnel Tubing** is made in lengths of 6, 8, and 10 feet.

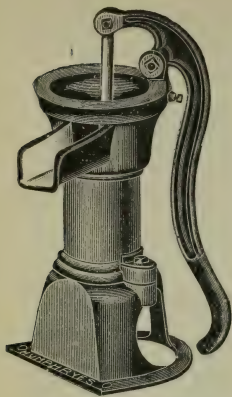
**Plain Tubing** is used in cisterns or wells where the depth is greater than 19 feet between the Reservoir and Funnel to make required length. Plain Tubing is made in 8 and 10 feet lengths.

**Reservoir Tubing with Funnel** is made in lengths of 9 and 10 feet, purposely for cisterns of 8 and 9 feet depth.

Directions to get proper length of Tubing for Cistern: Add to whatever the depth of cistern measures from platform to bottom 1 more foot of tubing; this will give proper allowance for tubing in curb, and the right distance it should hang from bottom.

Price either style, 10c per foot, with additional charge for the couplings of 20c per set.





### PITCHER SPOUT PUMP

No.	Diameter Cylinder Inches	Suction Fitted For Pipe, In.	B2160 Iron	B2161 Brass Tube Cylinder	B2162 Porcelain Lined Cylinder
1	2½	1	4.25	6.50	6.50
2	3	1¼	4.75	7.25	7.25
3	3½	1¼	5.25	8.00	8.00
4	4	1½	6.25	9.00	9.00
5	4½	2	9.50	12.50	12.50

The valve can be tripped by raising the handle.

### AIR COMPRESSOR

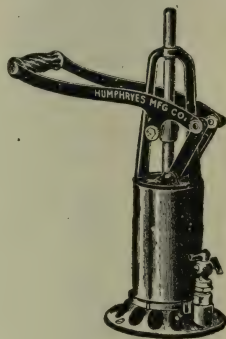
B2163½

3-inch Brass Cylinder.

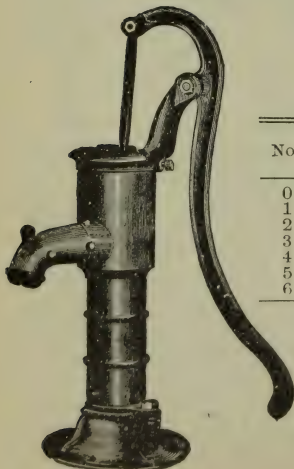
4-inch Stroke.

¾-inch Discharge.

Each, \$10.00.



B2163½



B2163

B2163

Stroke, 6 Inches

No.	Diameter Cylinder Inches	Suction For Pipe, In.	Iron Each	Brass Cylinder Each
0	2	1	3.50	5.50
1	2¼	1	4.00	6.00
2	2½	1¼	4.50	7.00
3	2¾	1¼	5.00	8.00
4	3	1¼	5.50	10.00
5	3¼	1½	6.50	13.00
6	3½	1½ or 2	8.00	18.00

Can trip valve by raising the lever.

# ADJUSTABLE BASE ANTI-FREEZING PUMPS

Gas Pipe Standard

OPEN TOP LIFT PUMPS,  
WITH SIPHON SPOUTS

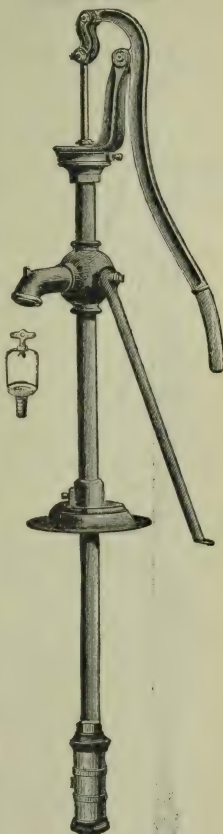
FORCE PUMP



B2164



B2165



B2166

Six-inch Stroke, fitted for 1¼-inch Suction Pipe. Price with Iron Cylinders:

No.	Diameter Cylinder	B2164	No.	Diameter Cylinder	B2165	No.	Diameter Cylinder	B2166
4	3 inches	8.50	4	3 inches	9.00	4	3 inches	8.50
Standard is of 1¼-inch Gas Pipe			Standard is of 1½-inch Gas Pipe			Standard is of 1¼-inch Gas Pipe		

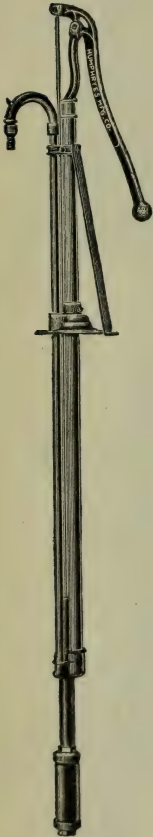
B2164 and B2165 can be furnished from factory with Tight Top at special price. Pumps on this page can be furnished with Brass Tube or Brass-Lined Cylinders at special prices, also with 2½-inch or 2¾-inch Cylinders if desired.

# "CENTURY" DOUBLE-ACTING FORCE PUMPS

With Adjustable Base For Shallow and Deep Wells

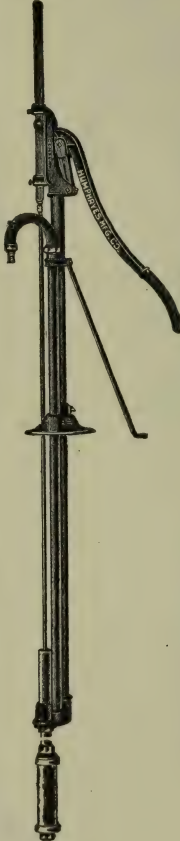
HAND PUMP    WIND MILL PUMP    THREE-WAY WIND MILL PUMPS  
WITH CYLINDERS    NEW STYLE  
(Cylinder extra)

H117



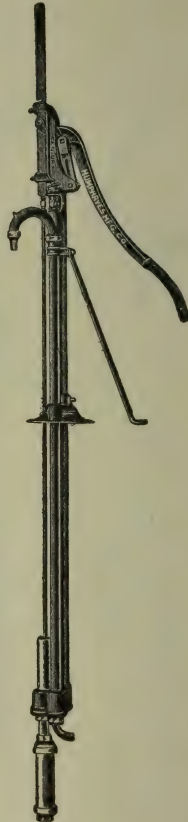
B2170

H119



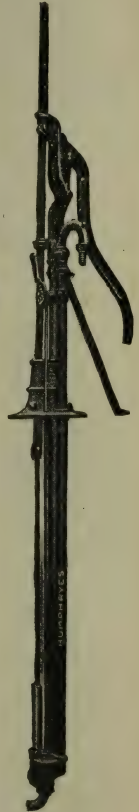
B2171

H120



B2172

H123



B2173

Also made with 3-way Valve. Cylinder is detachable so it may be used in Deep Well.

If Century Pumps are used for Deep Wells the Bottom Cylinder should be lowered to within 15 feet of the Water. Lower Cylinders are detachable.

Tapped 2 inches for Tubular Wells. Also furnished fitted  $1\frac{1}{4}$  inch with Lower Cylinder for Shallow or Deep Wells.

See Description and Prices next page.

## CENTURY DOUBLE ACTING PUMPS

For Shallow or Deep Well—6-inch Stroke

**B2170** (No. 117H) **Hand Pump** with 3-inch Brass Cylinder, \$15.00. If wanted with Three-Way Valve add to list \$3.00.

**B2171** (No. 119H) **Windmill Pump**, 3-inch Brass Cylinder, \$16.00.

**B2172** (No. 120H) is same as 119H, with **Three-Way Valve** \$19.00.

**B2173**. (No. 123H) **New Century Windmill Standard** only with Three-Way Valve (Lower Cylinder not included). Size 1, fitted for 1¼-inch Pipe, 6-inch Stroke, \$13.00. Size 2, fitted for 2-inch Pipe, 10-inch Stroke, \$13.50.

Size 1 has 1¼-inch Upper Cylinder, size 2 has 1½-inch Upper Cylinder.

If furnished with 2½ or 3-inch **Lower Cylinder** (Brass), add to list 6.00.

No. 1 takes 12-inch Long Cylinder, No. 2 takes 14-inch Long Cylinder.

Adjustable Stroke Pump, 6, 8 and 10 inch, same price as 10-inch Stroke.

**A Stuffing Box** can be substituted for the Upper Cylinder at same price if desired.

These **B2173** New Century Pumps have the base cast in two pieces, extending very high on the Air Chamber. The Three-Way Valve is operated by a malleable cam attached to the Air Chamber and Discharge Pipe. The rod connecting to the distributing valve is on outside of Discharge Pipe, which avoids all possible chance of freezing. The entire pump fitted with 3-inch Flush Cap Cylinder can be easily placed inside 6-inch casing.

The Brass Union Ell on Three-Way can be turned to suit the direction of underground pipes. The working head is tapped regularly for 2-inch pipe, so that when used on tubular wells the valves can be withdrawn, but can be furnished with Universal Bushing, when so ordered, for connection to smaller size pipe and cylinders. The Windmill Rod, or flat rod, extends below base and is attached to Round Rod by means of malleable clip.

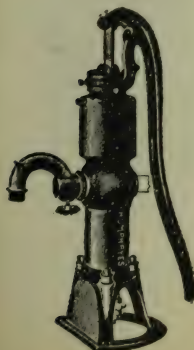
These Century and New Century Pumps have **large Air Chamber**, which insures a steady stream. They have adjustable base and brace, making them convenient to set.

## SYPHON SPOUT, DOUBLE ACTING HOUSE FORCE PUMP

With Air Chamber and Submerged Upper Cylinder

**B2175** as illustrated with **Cock in Spout** and tapped in back for upward discharge.

**B2175½** is without Cock and rear tapping.  
Stroke, 4 inches.



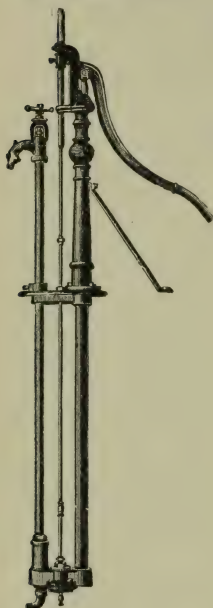
**B2175**

	Brass Lined Cylinder	Brass Cylinder
<b>B2175</b> <b>Cock Spout</b> , Diam. Cyl. 2½ in., Suction fitted for 1-in. Pipe.....	8.50	9.50
Diam. Cyl. 3 in., Suction fitted for 1¼-in. Pipe..	10.50	11.50
<b>B2175½</b> <b>Plain Spout</b> , Diam. Cyl. 2½ in., Suction fitted for 1-in. Pipe....	6.50	7.50
Diam. Cyl. 3 in., Suc- tion fitted for 1¼-in. Pipe.....	8.50	9.50



## WINDMILL THREE-WAY PUMP

ILLUSTRATES SINGLE  
ACTING STANDARD  
FOR DEEP WELLS



**B2190**

**Three-Way Standard  
without Cylinder**

With 1½-in. Air Chamber.  
Tubular valves can be  
withdrawn.

ILLUSTRATES DOUBLE  
ACTING PUMP WITH  
BOTH CYLINDERS



**B2191**

**Double Acting Pump with  
Brass Cylinders**

Stroke	Suction Fitted For	Price
6 inches	1¼ inch	17.00
10 "	2 "	18.50

If Double Acting, add for  
Upper Cylinder, 50c. extra.

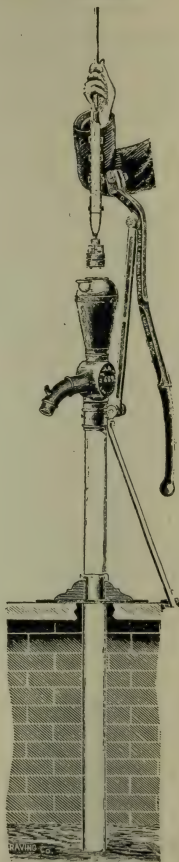
If Air Chamber is 2 in.,  
add \$1.00.

Can be furnished with  
Upper Cylinder, making  
Pump Double Acting.

No. 1.	Cylinder 2½ in. Brass, Stroke 6 in., Suction fit- ted for 1¼ in. Pipe	21.50
No. 2.	Cylinder 3 in. Brass, Stroke 6 in., Suction fit- ted for 1¼ in. Pipe	22.50

If Single Acting, without  
Upper Cylinder, deduct 50c.

## MASCOT TUBULAR WELL PUMP



**B2195**

Each, \$4 50

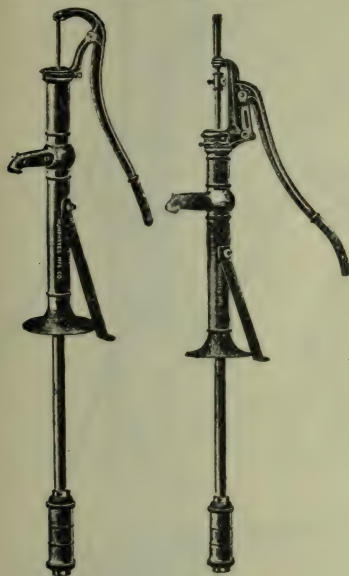
The 2 inch Well Pipe forms  
the standard, on to which  
the head is screwed just  
below the spout. The base  
is adjustable, has steel  
brace and a Windmill Slide.

The tubular well valves are easily removed from **Mascot Pump** shown in cut, by  
taking out a plug at top of head.

# SET LENGTH ANTI-FREEZING PUMPS

## LIFT PUMPS

Hand, Open Top      Wind Mill

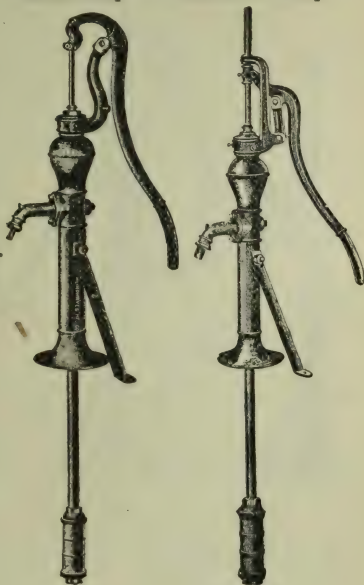


B2200

B2201

## FORCE PUMPS

Hand Pump      Wind Mill Pump



B2202

B2203

Cock Spout Extra.

Can furnish with Brass Cylinders at special price.

## HAND LIFT PUMPS

With Iron Cylinder, 6-in. Stroke

No.	Cylinder 10 Inches	Suction Fitted For Pipe. In.	B2200 Open Top	B2200½ Tight Top
1	2½	1¼	7.50	8.75
2	2¾	1¼	8.00	9.00
3	3	1¼	8.50	9.25

## HAND FORCE PUMPS

With Iron Cylinder, 6-in. Stroke

No.	Cylinder 10 Inches	Suction Fitted For Pipe. In.	B2202
3	2½	1¼	13.00
4	3	1¼	13.00
5	3¼	1¼	13.50
6	3½	1¼	14.00

Cock Spout adds \$2.00 list.

## WINDMILL LIFT PUMPS

With Iron Cylinder, 6-in. Stroke

No.	Cylinder 10 Inches	Suction Fitted For Pipe. In.	B2201
1	2¼	1¼	8.75
2	2½	1¼	9.00
3	2¾	1¼	9.25
4	3	1¼	9.50
5	3¼	1¼	9.75
6	3½	1¼	10.25

## WINDMILL FORCE PUMPS

With Iron Cylinder, 6-in. Stroke

No.	Cylinder 10 Inches	Suction Fitted For Pipe. In.	B2203
3	2¾	1¼	13.25
4	3	1¼	13.50
5	3¼	1¼	14.00
6	3½	1¼	14.50

For Cock Spout add to list 2.50.

## WINDMILL PUMP STANDARDS

## LIFT STANDARDS

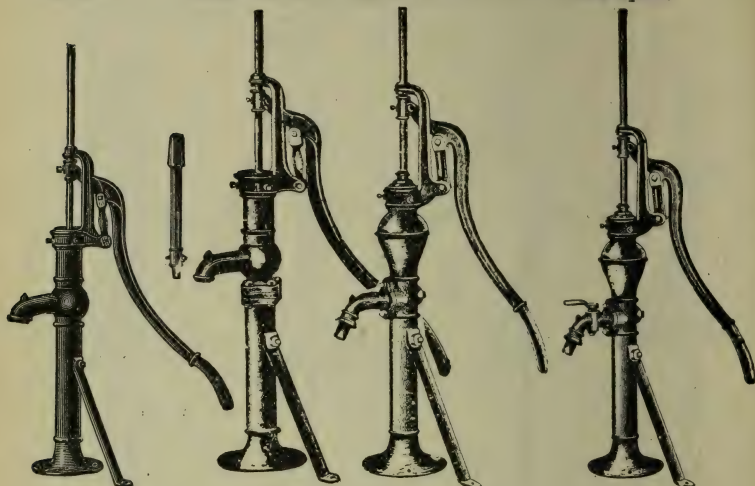
Regular

Large Pattern

## FORCE STANDARDS

Plain Spout

Cock Spout



B2205

B2206

B2207

B2208

## B2205. LIFT PUMP STANDARD

6-inch Stroke.....	each	7.00
10 " ".....	"	9.00

Above Standards fitted for  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , or 2-inch pipe.

## \*B2206. EXTRA HEAVY LIFT PUMP STANDARD

10-inch Stroke, fitted for $2\frac{1}{2}$ -inch or smaller pipe.....	each	11.50
--	------	-------

## B2207. FORCE PUMP STANDARD WITH PLAIN SPOUT

6-inch Stroke.....	each	10.00
10 " ".....	"	11.50
*10 " " (Special) Tapped for $2\frac{1}{2}$ -inch pipe.....	"	15.00

Standards can be furnished for  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , or 2-inch pipe.

## B2208. FORCE PUMP STANDARD WITH COCK SPOUT

6-inch Stroke.....	each	12.50
10 " ".....	"	14.00
*10 " " (Special) Tapped for $2\frac{1}{2}$ -inch pipe.....	"	17.50

B2208 can be furnished for  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , or 2-inch pipe.

\*These Standards for  $2\frac{1}{2}$ -inch pipe generally have the stock cast in two sections, and bolted together just below spout, and flange tapped for well pipe is inserted at this joint. Top of Standard may be removed and valves withdrawn.

# HAND PUMP STANDARDS

LIGHT PATTERN OPEN TOP

EXTRA HEAVY PATTERN

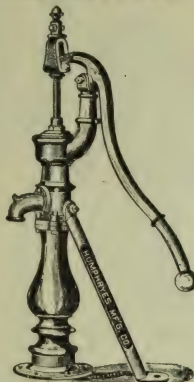


B2210

Fitted for 1 1/4 in. pipe, 6 in. stroke, 4.25

Heavy Pattern

Fitted for 1 1/4 in. pipe, 8 in. stroke, 6.00



B2211

Lift for 1 1/2 in. pipe, 6 in. stroke, 10.00

Can be fitted for 1 1/4 in. or 2 in. pipe.

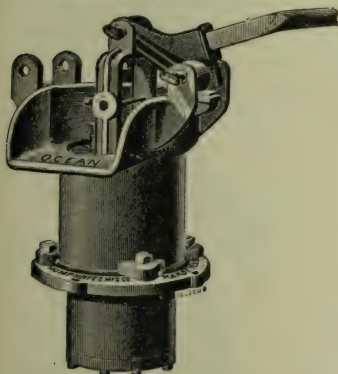
Pipe Screws into flange under spout.

Intended for wells up to 100 feet deep.

B2212 Force Pump, similar to B2211, with Hose Coupling and Air Chamber on Spout, 13.00.

Cock Spout, add 2.00.

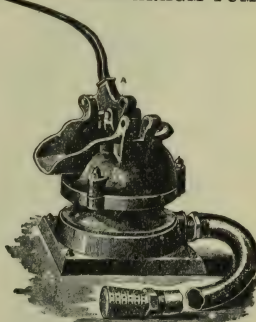
## BILGE PUMP



B2215

## TRENCH PUMPS

## DIAPHRAGM PUMP



B2216

No.	Diam. Cylinder	Suction Fitted for	Stroke	Gallons per Stroke	Price
1	6 In.	2 1/2 In. Pipe	4 In.	1/2	23.00
2	8 1/2 In.	3 In. "	6 In.	1 1/2	30.00

If with Side Suction, with Flange and Bolts, add 1.00.

	No.	Suction	Capacity per Stroke	Price
Side Suction	2	3 In.	1 1/2 Gallons	45.00

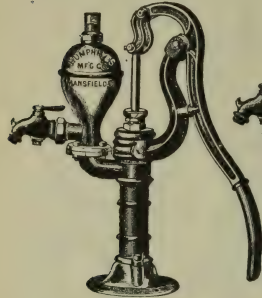
Price does not include Hose and Strainer.

If with Bottom Suction, deduct 5.00.

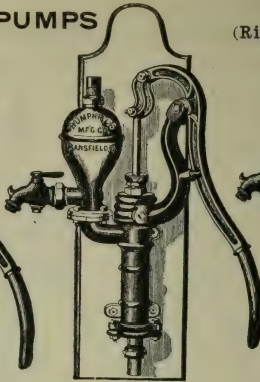


HAND FORCE PUMPS

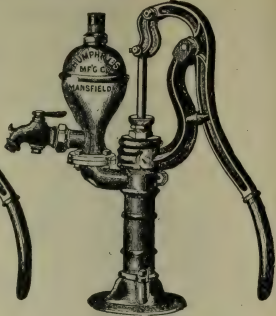
With Adjustable  
(Right or Left) Handle



B2230



B2231



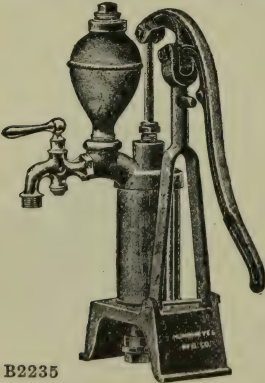
B2232

	No.	Diam. Cylinder Inches	Suction and Discharge Fitted For	Stroke In.	Iron	Brass Cylinder
B2230 and B2231	1	2	1¼ inch Pipe	6	11.00	16.50
	2	2½	1¼ " "	6	12.50	18.00
	3	3	1¼ " "	6	14.50	19.50
	4	3½	1½ " "	8	21.50	29.50
	5	4	1½ or 2 " "	8	22.50	35.50
B2232	2	2½	1¼ inch Pipe	6	16.00	20.00
	3	3	1¼ " "	6	18.00	24.00

These pumps made with plain spout, also without a ir chamber, etc.

BRASS CYLINDER FORCE PUMP

IMPROVED HAND FORCE PUMP



B2235

Cylinder 3 inch, Stroke 6 inch. Fitted  
for 1¼-inch pipe.

Price, as illustrated, 11.50.  
Price, with Plain Spout (no cock), 10.00.  
Deduct if without air chamber, 1.50.  
Can be furnished on plank like B2231.



B2238

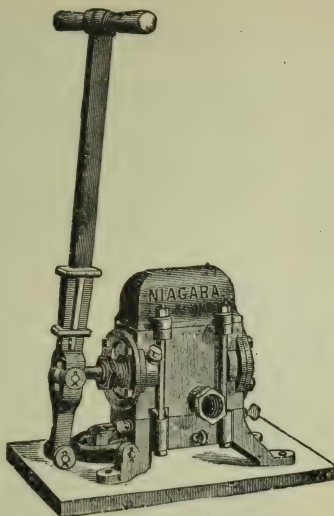
No.	Size Cyl'd'r Inch's	Suct'on Pipe Inch's	Dischg. Hose Inch's	Stroke In.	Price
1	2½	1	¾	4	8.50
2	3	1¼	¾	4	9.50

If without cock in spout deduct \$2.50.

# HORIZONTAL DOUBLE ACTING FORCE PUMPS



\*B2240



†B2241

No.	Diam. Cyl'd'r In.	Double Suction Fitted For Pipe Inches	Double Dischg. Fitted For Pipe Inches	Iron	Brass Lined	No.	Diam. Cyl'd'r In.	Suction Inches	Dischg. Inches	Brass Lined
2	2½	1¼	1	16.00	17.50	2	2½	1¼	1	27.00
4	3	1¼	1	18.00	20.00	4	3	1¼	1	28.00
6	3½	1½	1¼	20.00	22.50	8	4	1½	1¼	30.00
8	4	1½	1¼	24.00	27.00	12	5	2	1½	40.00

\* 5-inch Stroke. † Can furnish with high air chamber at same price.  
4½-inch stroke, except No. 12 is 5-inch stroke.

**B2240** Pump is always fitted for iron pipe, but can be fitted for lead pipe or hose if especially ordered.

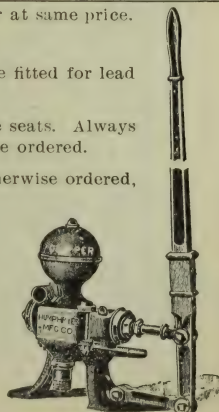
**B2241** Pump has bronze piston rod, valves and valve seats. Always fitted suction and discharge for iron pipe unless otherwise ordered.

**B2242** Pump is always fitted for iron pipe unless otherwise ordered, but can be fitted for hose or lead pipe if ordered.

B2242

No.	Size Cyl'd'r Inches	Suction Fitted For Pipe, In.	Discharge Fitted For Pipe, In.	Iron	Brass Lined Cylinder
1	2½	1¼	1	16.00	18.00
2	3	1½	1¼	18.00	21.00

Stroke, 4 inches.



## TANK PUMPS

## Myer's Horizontal, Low Down, Double Acting

Price with Suction Strainer and Hose Nipple..... 15.00

If with Brass Lined Cylinder add \$5.00.

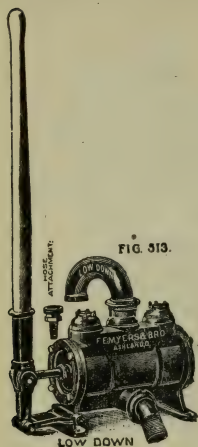
Myer's Patent Suction Strainer only, each \$1.50.

For Hose see other pages, this catalogue.

Five-inch Cylinder, five-inch Stroke, Suction and Discharge two-inch.

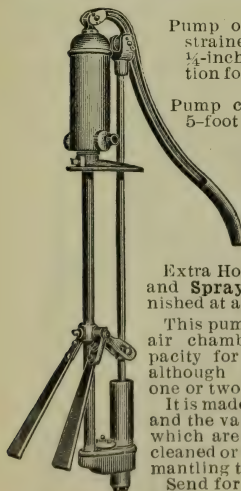
Order repairs by number cast on part.

Useful for filling thresher tanks, washing out boilers, for use in shallow stock wells, draining cellars and barnyards, irrigation purposes, washing wagons, windows, etc., spraying fruit trees, putting out fires, and general use about the farm. As a protection against fire is without a rival.



B2250

## BARREL SPRAY PUMP



B2251

Pump only, with agitator, strainer and one foot of  $\frac{1}{4}$ -inch Pipe, with connection for  $\frac{1}{2}$ -inch hose, 11.00

Pump complete, with one 5-foot line  $\frac{1}{2}$ -inch, 3-ply Hose, Vermorel Spray Nozzle, Strainer and Agitator..... 13.00

Pump complete, with two lines of Hose and Nozzles. 15.00

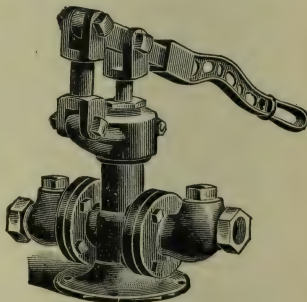
Extra Hose, Pipe Extensions and Spraying Nozzles, furnished at additional cost.

This pump has an extra large air chamber, with ample capacity for four lines of hose, although fitted regularly for one or two lines only.

It is made with brass cylinder, and the valves and valve seats, which are also of brass, can be cleaned or removed without dismantling the pump.

Send for special circular giving full information regarding spraying mixtures.

## HYDRAULIC TEST PUMP



B2252

No.	Diam. Ram	Working Pressure	Price Each
0	$\frac{3}{4}$ in.	700 lbs.	18.50
1	1 "	550 "	19.00
2	$1\frac{1}{4}$ "	400 "	19.50
3	$1\frac{1}{2}$ "	200 "	20.00

With strong wood barrow and cast tank underneath, add to list \$10.00.

Pipe connection of pump 1 inch. Stroke 5 inch.

Should set very close to water.

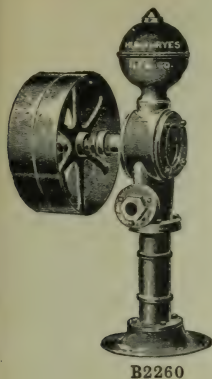
# VERTICAL POWER PISTON PUMP

The lower section of the standard forms the cylinder intended for shallow wells, but can be furnished with stub rods (omitting plunger and valves), for connection to deep well cylinder.

Fitted for 1 1/4 pipe suction and discharge, stroke 6 inch.

No. 4 with tight and loose pulley, 3 in. cylinder...	30.00
No. 6 " " " " " 3 1/2 " " "	37.00

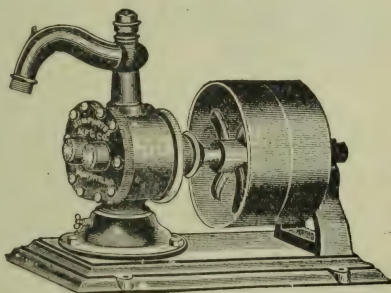
If with tight pulley only, with crank handle for hand use. deduct 5.00.



B2260

## ROTARY FORCE PUMP

On Base with Tight and Loose Pulleys



B2262

No.	Suction Fitted for	Discharge Fitted for	Gallons Per Minute at 100 Rev.	Iron	Bronze Case and Cams
1	1 1/4 Inch Pipe	1 Inch Pipe	13	27.00	49.00
2	1 1/4 " "	1 " "	14	32.00	56.00
3	1 1/2 " "	1 1/4 " "	17	38.00	63.00
4	1 1/2 " "	1 1/2 " "	27	48.00	78.00
5	2 " "	2 " "	33	54.00	90.00
6	3 " "	3 " "	55	80.00	135.00

Rotary Pumps are useful for pumping hot or cold water and other liquids, and are especially valuable, as fire pumps. Will draw cold water by suction vertically about same distance as a piston pump. However a foot valve should be used. If for hot liquids, they should be fitted with metallic valves.

## ROTARY HAND PUMP

With Fly Wheel

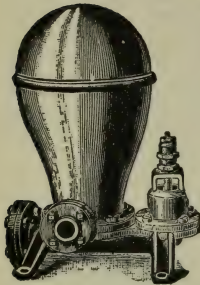
B2263



No.	Suction Fitted for	Discharge Fitted for	Iron	Bronze Case & Cams
1	1 1/4 Inch Pipe	1 Inch Pipe	20.00	42.00
2	1 1/4 " "	1 " "	23.00	47.00
3	1 1/2 " "	1 1/4 " "	27.00	52.00



## IMPROVED HYDRAULIC RAMS



B2270

No.	Quantity of Water Furnished per Minute by the Fountain to Which Ram is Adapted	Caliber of Pipes		Price
		Drive	Dis-charge	
2	2 Quarts to 2 Gallons	$\frac{3}{4}$ In.	$\frac{1}{2}$ In.	9.00
3	$1\frac{1}{2}$ Gallons to 4 "	1 "	$\frac{1}{2}$ "	11.00
4	3 " to 7 "	$1\frac{1}{4}$ "	$\frac{3}{4}$ "	14.00
5	6 " to 14 "	2 "	1 "	22.00
6	11 " to 25 "	$2\frac{1}{2}$ "	$1\frac{1}{4}$ "	40.00
7	20 " to 40 "	3 "	$1\frac{1}{2}$ "	75.00
8	25 " to 75 "	6 "	2 "	125.00

Drive pipe must be not less than 25 feet to 50 feet long. This may be accomplished by bending the pipe into a coil 5 or 6 feet diameter or by using elbows. (45 degree ells preferred.)

The size of the pipes should vary in proportion to the distance the water is to be conveyed, as the greater the distance the larger the pipe in proportion to the size of the machine. This applies to the discharge pipe only.

By means of an adjuster, applied to each of our rams, the quantity of water drawn from the fountain may be varied at pleasure, thus readily adapting the machine to a *variable supply*.

Ram and pipes must be secured against effects of frost. The ram will elevate or force water almost any distance, depending however on the amount of fall at disposal.

It is practicable where the spring or brook is only 18 inches higher than the ram; yet, as the height increases, the more powerfully the ram operates, and its ability to force water to a greater elevation and distance is correspondingly increased. The relative height of the spring or source of supply above the ram, and the elevation to which it is required to raise, determine the relative proportion between the water raised and wasted, the quantity raised varying according to the height it is conveyed with a given fall. Also the distance the water has to be conducted, and consequent length of pipes, have some influence on the quantity delivered at the point of discharge, as the more extended the pipes through which the water has to be forced by the ram, the more friction there is to be overcome by the machine. Nevertheless, rams are frequently and successfully employed for driving water a distance of 100 to 200 rods, to an altitude of 100 to 200 feet above the ram. A fall of ten feet from the brook or spring to the ram is abundantly sufficient to raise water to any point less than 150 feet above the location of the machine, while the same amount of fall would also raise water to a point considerably higher, though the supply of water will be proportionately diminished as the height and distance increase. When the requisite quantity of water is forthcoming from the ram, operating under a certain fall, it is not judicious to give it more, for by so doing the strain on the machine is increased.

For ordinary purposes, it is sufficient to say that, in conveying water, say 50 or 60 rods, it may be safely calculated that one-seventh of the water can be raised and discharged at an elevation five times as high as the fall, or one-fourteenth part can be raised and discharged, say ten times as high as the fall applied, and so in like proportion as the fall or height is varied.

Thus, with a fall of five feet, of every seven gallons drawn from the fountain, one may be raised 25 feet, or half a gallon 50 feet; or with 10 feet fall, one gallon of every fourteen may be raised to the height of 100 feet, and so in proportion as the fall or height is varied. Turns in either drive or discharge pipe should be avoided if possible. When it is impossible to set the ram without having elbows in the pipe, make the elbows as large as may be, so as to make as little obstruction to the free and easy flow of the water as is practicable.

## INFORMATION CONCERNING PUMPS

For the benefit of those interested, we offer below a few suggestions and Rules, applicable to Pumps, concerning Capacity, Speed, and Power required in operating, etc.

Theoretically, water can be raised vertically by suction about 33 feet; but since it is impossible to obtain a perfect vacuum, 20 to 25 feet is about as great a vertical distance as we would recommend a Pump (the Cylinder or Working Barrel) to be placed above the water, to insure its successful operation.

The necessary parts of a Pump are: the Cylinder, the Plunger (and its valve), the Check Valve (lower valve of Cylinder), the Suction Pipe, and the Piston or Connecting Rod. In order that the Pump works properly, all these parts should be in perfect condition; the Cylinder should be true, the plunger should fit the Cylinder accurately, and both the Plunger Valve and Check Valve (lower valve of Cylinder) should seat square and tight. Every part of the Cylinder should be air-tight, particularly all parts below the Plunger.

**CAPACITY.**—To compute the capacity of a Pump, apply the following rule: Square the diameter (in inches) of the Cylinder, multiply this by .7854, and the result (which is the area of the circle of Cylinder) by the length of stroke in inches. This gives the capacity in cubic inches per stroke (or revolution). Multiply this by the number of strokes per minute, and divide the product by 231 (the number of cubic inches in a gallon of water), and the result will be the capacity or amount of water the Pump will discharge per minute.

**POWER.**—To compute the Power required to raise a given amount of water per minute, to a certain height, apply the following rule: Multiply the number of gallons the Pump discharges per minute by 8.355 (the weight in pounds of one gallon of water), and the product by the total number of feet the water is to be elevated above the supply. The result is the Power required, in foot-pounds; divide this by 33,000 (the number of foot-pounds of one horse-power), and you have the horse-power necessary to do the work. About twenty per cent. must be added to this to compensate for friction, slip of valves, etc. The power of five men is equivalent to about one horse-power. Steam Engines, with the usual rated horse-power, will do more than that number of horses.

**SPEED.**—To compute the number of strokes per minute necessary to discharge a given quantity of water (the diameter of Cylinder, and length of stroke being known), apply the following.

**Rule:**—Divide the amount of water to be discharged (in gallons) per minute by the capacity (in gallons) per stroke, and you have the number of strokes per minute necessary to do the work. It may be well to note that the piston of a Power Pump should travel at a speed not greater than 100 ft. per minute.

The areas of circles are to each other as the squares of their respective diameters. In other words, doubling the Diameter of a Pipe or Cylinder increases its capacity (area of circle) four times.

Every foot of height in a column of water represents .434 pounds pressure to the square inch; in common practice, however, it is estimated that every foot in height represents one-half pound pressure to the square inch.

A cubic inch of water weighs .03617 lbs.

A cubic foot of water weighs 62.46 lbs.

A gallon of water weighs 8.355 lbs.

A gallon of water contains 231 cubic in.

A cubic foot of water contains 1,728 cubic in.

A cubic foot of water contains 7.4805 gals.

# TABLE SHOWING AMOUNT OF WATER DISCHARGED PER STROKE

## BY A SINGLE-ACTING PUMP

The Diameter of Cylinder and Length of Stroke Being Known.

There is also appended a Table of Diameters and Areas of Circles, the Diameters of Circles and Cylinders Being Identical.

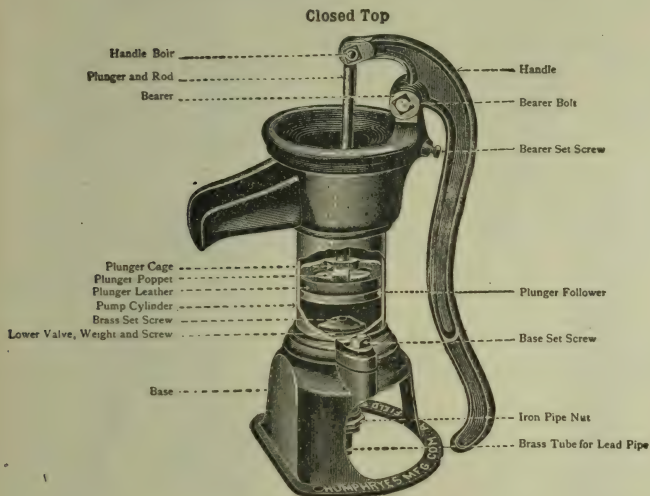
Diameter of Pump Cylinder in Inches	LENGTH OF STROKE IN INCHES, WITH CAPACITY PER STROKE IN GALLONS											DIAMETERS AND AREAS OF CIRCLES	
	1	2	3	4	5	6	7	8	10	12	Inches	Diameter of Circle (Pump Cylinder) in Inches	Area of Circle (Pump Cylinder) in Square Inches
1	.0034	.0068	.0102	.0136	.0170	.0204	.0238	.0272	.0340	.0408	Gallons	1	.7854
1 1/4	.0053	.0106	.0159	.0212	.0266	.0319	.0372	.0425	.0531	.0637	"	1 1/4	1.2271
1 1/2	.0076	.0153	.0229	.0306	.0382	.0459	.0535	.0612	.0765	.0918	"	1 1/2	1.7671
1 3/4	.0104	.0208	.0312	.0416	.0521	.0625	.0729	.0833	.1041	.1249	"	1 3/4	2.4043
2	.0156	.0272	.0408	.0544	.0680	.0816	.0952	.1088	.1360	.1632	"	2	3.1416
2 1/4	.0172	.0344	.0516	.0688	.0860	.1033	.1205	.1377	.1721	.2071	"	2 1/4	3.9760
2 1/2	.0212	.0425	.0637	.0850	.1062	.1275	.1487	.1700	.2125	.2550	"	2 1/2	4.9087
2 3/4	.0257	.0514	.0771	.1028	.1285	.1543	.1800	.2057	.2571	.3085	"	2 3/4	5.9395
3	.0306	.0612	.0918	.1224	.1530	.1836	.2142	.2448	.3060	.3672	"	3	7.0686
3 1/4	.0359	.0719	.1078	.1438	.1795	.2156	.2515	.2875	.3594	.4313	"	3 1/4	8.2957
3 1/2	.0416	.0835	.1249	.1666	.2082	.2499	.2915	.3332	.4165	.4998	"	3 1/2	9.6211
3 3/4	.0479	.0957	.1435	.1914	.2393	.2871	.3350	.3828	.4785	.5743	"	3 3/4	11.044
4	.0544	.1088	.1632	.2176	.2720	.3264	.3808	.4352	.5440	.6528	"	4	12.566
4 1/2	.0688	.1377	.2065	.2754	.3442	.4131	.4819	.5508	.6885	.8262	"	4 1/2	15.904
5	.0850	.1700	.2550	.3400	.4250	.5100	.5950	.6800	.8500	1.0200	"	5	19.635
5 1/2	.1028	.2057	.3085	.4114	.5142	.6171	.7199	.8228	1.0285	1.2342	"	5 1/2	23.758
6	.1224	.2448	.3672	.4896	.6120	.7344	.8568	.9792	1.2240	1.4688	"	6	28.274
7	.1666	.3332	.4998	.6664	.8330	.9996	1.1662	1.3328	1.6660	1.9992	"	7	38.484
8	.2176	.4352	.6528	.8704	1.0880	1.3056	1.5232	1.7408	2.1760	2.6112	"	8	50.265
9	.2754	.5508	.8262	1.1016	1.3770	1.6524	1.9278	2.2032	2.7540	3.3048	"	9	63.617
10	.3400	.6800	1.0200	1.3600	1.7000	2.0400	2.3800	2.7200	3.4000	4.0800	"	10	78.540
12	.4896	.9792	1.4688	1.9584	2.4480	2.9376	3.4272	3.9168	4.8960	5.8752	"	12	113.098
15	.7650	1.5300	2.2950	3.0600	3.8250	4.5960	5.3550	6.1200	7.6500	9.1800	"	15	176.715
18	1.0162	2.0323	3.0484	4.0645	5.0806	6.0966	7.1127	8.1288	10.1664	12.1992	"	18	254.470
20	1.3600	2.7200	4.0800	5.4400	6.8000	8.1600	9.5200	10.8800	13.6000	16.3200	"	20	314.160
24	1.9584	3.9168	5.8752	7.8336	9.7920	11.7504	13.7088	15.6672	19.5840	23.5008	"	24	452.391

The capacities in gallons given in the foregoing table are for a Single-acting Pump, making one complete stroke (or revolution). The capacity of a Double-acting Pump is double that of a Single-acting Pump, with the same diameter of Cylinder and length of stroke.

To obtain the Capacity of a Pump with diameter of Cylinder given in the table, but with a longer stroke than 12 inches (the longest stroke given in table), add or multiply the capacity to represent the required length of stroke.

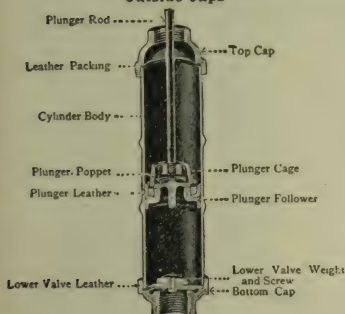
For instance: The capacity of a Cylinder with an 18-inch stroke would be the same as that (having the same diameter) of a 12-inch stroke cylinder, added to the capacity of a 6-inch stroke Cylinder; or the same result may be obtained by multiplying the capacity of a Cylinder with 6-inch stroke by 3. To obtain the amount of water discharged per minute, multiply the capacity per stroke by the number of strokes per minute.

# PUMP REPAIRS ILLUSTRATED



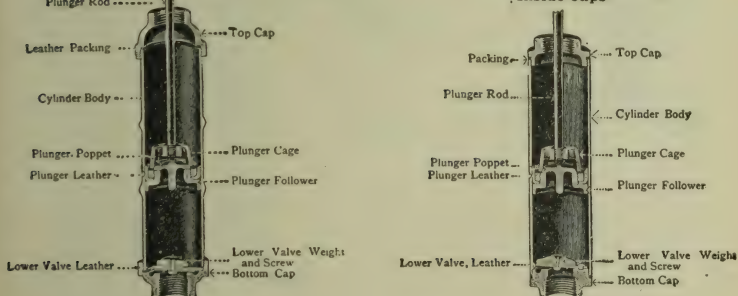
B2275

## Iron or Brass Cylinder Outside Caps



B2276

## Iron or Brass Cylinder Inside Caps



E2278

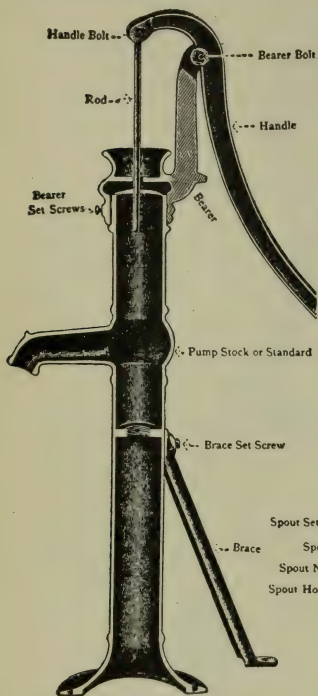
The names of Pump and Cylinder repairs given on this page apply to all similar parts of any of our pumps and cylinders.

In ordering pump repairs give all figures and letters on each repair wanted, and if possible state the name of the manufacturer as cast on the pump or cylinder. If you do not know Figure or Style of the pump refer to a similar pump illustrated in this catalogue, and if possible state size or number, if Number is not branded on the pump the size of the cylinder will help us to determine the size.

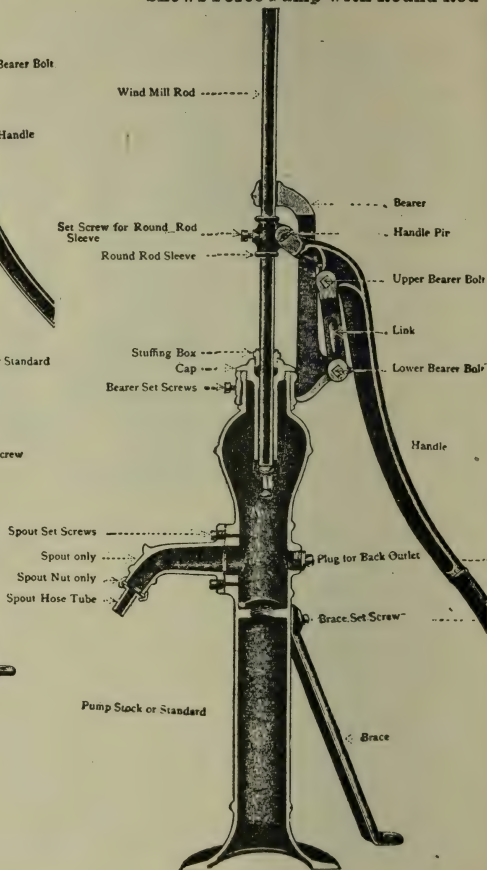
Repairs of one manufacturer will seldom fit pumps of another make.



## PUMP REPAIRS

PARTS OF HAND LIFT PUMP  
Shows Open Top Pump

B2279

PARTS OF WINDMILL PUMP  
Shows Force Pump with Round Rod

B2280

When ordering Pump Repairs, always state the manufacturer's name as cast on the pump, and the figure or style of pump; state whether a force pump or only a lift pump, whether a windmill pump or a hand pump. If you don't know the figure of pump, refer to a similar pattern in this catalogue and state number or size. If number is not branded on the pump standard, the size of the cylinders should be stated.

The names of Pump Repairs given on this page apply to all similar parts of any of our pumps. In ordering repairs for Windmill Pumps, always state whether Bearer, Handle, Bearer Link and Rod are for six or ten inch stroke pump.

In ordering Rods, state whether the pump is fitted for round or flat rod.

In ordering pump repairs, give all the figures and letters on each repair wanted.

The repairs of one manufacture will seldom fit a pump of another make.

# PUMP CYLINDERS

IRON CYLINDERS      BRASS TUBE CYLINDERS  
Outside Caps      Inside Caps      Brass Lined      Inside Caps      Outside Caps



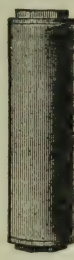
B2300



B2301



B2302



B2303



B2304

SIZE	Iron Cylinder with Iron Plunger	Brass Lined or Brass Tube with Iron Caps, Iron Plunger	Brass Tube with Iron Caps, Brass Cage and Valve, Iron Follower	All Brass
2 x 10	3.75	6.75	7.50	10.75
2 1/4 x "	4.00	7.00	7.75	11.00
2 1/2 x "	4.35	7.25	8.00	12.25
2 3/4 x "	4.70	7.50	8.50	12.75
3 x "	5.00	7.75	9.00	13.50
3 1/2 x "	7.00	8.75	10.50	16.75
4 x "	9.00	10.50	13.00	21.50
2 x 12	5.50	7.25	8.00	11.25
2 1/4 x "	5.75	7.50	8.25	11.50
2 1/2 x "	6.00	7.75	8.50	12.75
2 3/4 x "	6.50	8.00	9.00	13.25
3 x "	7.00	8.25	9.50	14.00
3 1/2 x "	9.00	9.50	11.25	17.50
4 x "	11.50	11.75	14.25	22.50
2 x 14	6.00	7.75	8.50	13.00
2 1/4 x "	6.25	8.25	9.00	13.50
2 1/2 x "	6.50	8.50	9.25	14.75
2 3/4 x "	7.00	8.75	9.75	15.50
3 x "	7.50	9.00	10.25	16.25
3 1/2 x "	10.00	10.50	12.25	21.00
4 x "	13.00	13.25	15.75	26.50
1 3/4 x 16	.....	.....	.....	13.75
2 x "	6.00	8.25	9.00	13.75
2 1/4 x "	6.50	9.00	9.75	14.50
2 1/2 x "	7.00	9.50	10.25	16.00
2 3/4 x "	7.50	9.75	10.75	16.50
3 x "	8.00	10.00	11.25	17.25
3 1/2 x "	11.25	11.75	13.50	22.25
4 x "	14.50	15.00	17.50	28.00
1 1/2 x 18	.....	.....	.....	14.25
1 3/4 x "	.....	.....	.....	14.25
2 x "	6.75	.....	9.50	14.25
2 1/4 x "	7.00	.....	10.50	15.25
2 1/2 x "	7.50	.....	11.25	17.00
3 x "	8.50	.....	12.25	18.25
3 1/2 x "	12.50	.....	14.75	23.50
4 x "	16.00	.....	19.25	29.75

Stroke, with style plungers (see next page) usually furnished, is as follows: 10 in., Style A, 6 in. stroke; 12 in., Style B, 6 in. stroke; 14 in., Style B, 10 in. stroke; 16 in. and 18 in., Style C, 10 in. stroke. Inside caps shorten stroke slightly. Shortening plunger lengthens stroke.

## PLUNGERS FOR PUMP CYLINDERS

ONE LEATHER  
PLUNGER  
A Style



B2310

TWO LEATHER  
PLUNGER  
A2 Style



B2311

LONG FOL-  
LOWER PLUNGER  
B Style



B2312

SAND  
PLUNGER



B2313

Inside Diam. Cylinder.....in.	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	6
"A" Style, Iron Plungers Only—No Rods	.65	.70	.75	.80	.85	.90	1.05	1.25	1.50	.....	.....	.....
"A" 2 " " " " " "	1.50	1.75	2.00	2.25	2.50	2.75	3.25	4.00	5.00	7.00	.....	.....
"B" " " " " " "	1.50	1.75	2.00	2.25	2.50	2.75	3.25	4.00	5.00	7.00	.....	.....
"C" " " " " " "	1.75	1.75	2.00	2.25	2.50	2.75	3.00	3.50	4.25	6.25	8.00	12.00
Sand, " " " " " "	.60	.60	.70	.....	.75	.....	1.00	1.10	.....	.....	.....	.....
"A" " " Brass Plungers " "	1.50	1.50	1.75	2.00	2.25	2.75	3.25	4.00	.....	.....	.....	.....
"A" 2 " " " " " "	2.25	2.25	2.50	2.75	3.00	3.50	4.00	4.75	5.50	8.00	12.00	18.00
"B" " " " " " "	.....	2.25	2.50	2.75	3.00	3.50	4.00	4.75	5.50	8.00	12.00	18.00
"C" " " " " " "	2.50	2.50	2.75	3.00	3.50	4.00	4.50	5.00	7.00	10.00	14.00	20.00

**A Style Plunger** has Single Leather and Short Follower and is the plunger furnished in 10 inch Iron, Brass, or Brass Lined Cylinders—the cage and all metal parts being of iron, but can be furnished with Brass Cage and Valve at special price.

**A2 Style Plunger**, same as above, except has two Leathers. **A4 Style Plunger**, same as above, except has four Leathers.

**B Long Follower Style**, same as above one leather plunger, except has a long (or extra long if desired) follower for 12 and 14 inch cylinders. Can be furnished with two or more Leathers if desired.

**Style C Plunger** is similar to Style B, except follower is extra long.

**NOTE.**—By using Long Follower or several leathers on a plunger, the stroke of the cylinder is necessarily shortened, as the plunger occupies more of the length of the cylinder.

**B2313. Sand Plunger**, one Leather only. Has leather valve instead of metal poppet. Sand Plunger is also made of brass at special price.



### PATENT POPPET VALVE SEAT

Brass with Rubber Disc

B2315

Iron or Brass Cylinders with outside cap or with inside caps, can be furnished fitted with poppet valves instead of the ordinary leather valve, at special price.

### PATENT DOUBLE ACTING PUMP CYLINDER



B2318

Prices and dimensions quoted on application.

The e Cylinders are made from 2¾ inch to 6¾ inch outside diameter. The small ones with 6 and 10 inch stroke—the large ones can be furnished any length stroke desired. In making inquiries give full details of well and service required.

The Cylinder is adapted for use in all kinds of wells, and can be operated by hand, windmill, or power pumps. The outside case and attachments are furnished in either iron or brass, as ordered—all inside parts, including inner tube and plunger tube, are always all brass. We recommend that this cylinder be placed under the water in any kind of a well, although it can be used above the water, the same as any other cylinder.

# TUBULAR WELL VALVES

POPPET  
PLUNGER



B2320

BALL  
PLUNGER



B2321

FOUR LEATHER  
PLUNGER



B2322

MARCY  
SPOOL  
PLUNGER  
Single  
Leather



B2323

MARCY CHECK  
With Dog  
Spring Coupling

BALE-TOP  
CHECK



B2325

BALE-TOP BALL  
CHECK



B2326

SCREW TOP  
CHECK

Also made  
with  
Ball Valve  
like B2326



B2327

MARCY  
SPOOL  
CHECK



B2328



B2329

## CHAPMAN PATTERN VALVES

Inches.....	2	2½	3	4	5	6
One two Leather Poppet or Ball Plunger and one Poppet or Ball Check Valve..... Per set	2.40	6.00	8.00	18.00	35.00	42.00
One four Leather Poppet or Ball Plunger, and one Poppet or Ball Check Valve..... Per set	3.20	7.00	19.00	21.00	38.00	50.00

Two Leather Plunger or Check Separate is half the price of set..

## MARCY VALVES

Inches.....	2	2½	3
Plunger B2323.....each	1.30	3.50	5.50
Check Valve B2328....."	1.50	4.00	6.50
" " with Dog Spring Coupling B2329....."	2.00	5.50	10.00



## EUREKA TUBULAR WELL CYLINDER

Complete with Valves and Spring Dog Coupling

Size of Well Inches	Inside Diameter Inches	Stroke Inches	Price of Cylinder Complete
2	1 $\frac{13}{16}$	12	6.40
2	1 $\frac{13}{16}$	16	7.60
2 $\frac{1}{2}$	2 $\frac{1}{4}$	12	11.00
2 $\frac{1}{2}$	2 $\frac{1}{4}$	16	12.50
3	2 $\frac{3}{4}$	12	15.00
3	2 $\frac{3}{4}$	16	17.00
3 $\frac{1}{2}$	3	12	30.00
3 $\frac{1}{2}$	3	16	33.00
4	3 $\frac{1}{2}$	16	36.00
4	3 $\frac{1}{2}$	24	42.00
4 $\frac{1}{2}$	4	16	50.00
4 $\frac{1}{2}$	4	24	58.00
5	4 $\frac{1}{2}$	24	60.00
5	4 $\frac{1}{2}$	36	80.00
6	5 $\frac{1}{2}$	24	112.00
6	5 $\frac{1}{2}$	36	136.00

Larger sizes quoted on application.

### DOG SPRING COUPLINGS



B2331

### SEATING TOOL



B2332

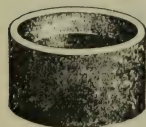
Size.....inches	2	2 $\frac{1}{2}$	3
B2332—Seating Tool.....each	.60	.90	1.20
B2331—D. S. Coupling .....	.60	1.50	2.50

Other sizes quoted on application.



B2330

### RUBBER PACKER RINGS



B2333

For  
Tubular Well Valves  
and

### Eureka Cylinders

Quoted on application.  
State style of valve.

Rubber Poppet Discs  
for Tubular Well Valve  
quoted on application.

### VALVE BALLS



B2334

Rubber or Bronze.  
Prices on application.

### TUBULAR WELL SEAL

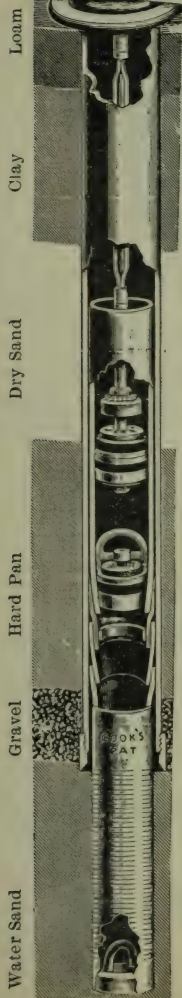


B2335

Size Well Inches	Tappel Inches	Price Each
2	1 $\frac{1}{4}$	2.00
2 $\frac{1}{2}$	1 $\frac{1}{2}$	3.00
3	2	4.00
3 $\frac{1}{2}$	2 $\frac{1}{2}$	6.00
4	2 $\frac{1}{2}$	8.00

Larger sizes quoted on  
application.

PLAIN BRASS  
WORKING BARREL  
AND  
COOK WELL SCREEN  
Imposition in  
Tubular Well



B2340

WORKING  
BARREL

B2340 shows a Plain Brass Working Barrel, Complete with Valves, set in Well on the top of a Cook's Patent Brass Strainer. It is not necessary to set the working barrel clear down to the strainer as illustrated, as a brass anchor can be furnished to hold the gum packer on bottom of working barrel at any point in the casing.

Pipe with open ends is first sunk to a proper depth or until a sufficient quantity of water-bearing sand or gravel has been penetrated. The strainer, with Lead Packer attached, is then lowered into the pipe. The pipe is then drawn back to allow the entire slotted portion of strainer to extend through lower end of pipe into the water-bearing sand or gravel (while pulling pipe back it is best to let poles remain in the well in order to know that strainer is not also drawn back). After pipe is drawn back as far as desired, lead packer is driven out, with tool made for the purpose, making a perfect joint between pipe and strainer. A Gum Packer with short brass tube attached is then shoved down the pipe to the point where working barrel is to be located. The working barrel is then lowered into well and firmly driven into the gum packer, making a tight joint between working barrel and pipe, at the same time holding working barrel in position.

The Cook Strainer can be furnished threaded inside or out-side at one or both ends, to screw onto a drop pipe in wells of that kind, and can be furnished open at both ends. The working barrel can be furnished cased in wrought-iron pipe, with coupling on each end for use where the suction pipe is dropped into the well.

ALL BRASS OR  
BRASS LINED  
IRON WORKING  
BARREL  
With Ball  
Valves



B2341

Can also furnish with Spool Valves instead of Ball Valves at special price.

TUBULAR  
WELL DRIVE  
CYLINDER

Brass Lined or  
Polished Iron  
Black or Gal-  
vanized



B2342

Prices on application. State full requirements and particulars.

PATENT ANCHORS

PATENT GUM PACKER



B2345

For Pipe Sizes 2 to 10 inch

Patent Anchors for supporting Gum Packer in a tubular well that has no strainer, or when working barrel is located some distance above the strainer. Also to support an inside pump pipe.

With Brass Tube attached for holding plain brass working barrel in position.



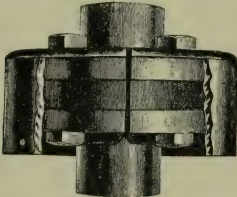
B2346

For Pipe Sizes 2 to 12 inch

Prices  
on  
Application

IMPROVED SANITARY WELL CAP

AIR CHAMBER



B2347



B2348

The Improved Sanitary Well Cap prevents—

1. The breaking of threads on supply pipe.
2. Raising of pump and platform by windmill.
3. All foreign substances from dropping in well.
4. Surface water from getting in well.
5. Use of platform around well.

Can be put on any well, any time, by anybody, without removing pump.

With Top and Side connections, each, \$2.50.

With one connection only, each, \$2.00.

Always state make of pump Air Chamber is to fit, and best to send template showing diameter of flange, and location and size of bolt holes.

Caps for 3-inch and 3 1/4-inch wells, per dozen	8.40
" " 3 1/2-inch wells..... "	9.00
" " 4-inch and 4 1/4-inch wells "	10.20
" " 5 1/2-inch wells..... "	15.00

DRIVE SHOES

B2349



Pipe Size, inch	2	2 1/2	3	3 1/2	4	4 1/2	5	6	8
Steel each	1.00	1.30	2.00	3.50	4.00	6.00	7.00	9.00	12.00
Malleable, "	.60	.85	1 15	1.50	2.00	....	....	....	....

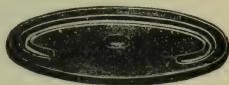
Larger Steel Shoes, also large size of Long Shrink Shoes, quoted on application.

CUP LEATHERS



B2360

VALVE LEATHER



B2361

PUMP LEATHERS

Diameter of Cylinder.....inches	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5
Cup Plunger Leathers.....per dozen	.48	.60	.78	.84	.96	1.20	1.44	1.68	1.92	2.16	2.88	4.80	6.72
Lower Valve " " " "	....	....	....	.67	.75	.84	.92	1.00	1.09	1.17	1.33	1.67	2.50

Lower Valve Leathers measure about ½ inch larger than the inside diameter of cylinder. When ordering always state "for— inch diameter cylinders," to prevent mistakes.

WOOD PUMP BUCKET LEATHERS—B2362

Strips 12x1½ inches.....per dozen \$3.50

OAK TAN PUMP LEATHERS IN SIDES—Quoted on application



B2365

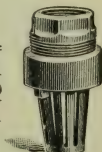
STRAINER FOOT VALVES

B2365 Black

Pipe Size... in.	1	1¼	1½	2	2½	3	3½	4
Screwed.....ea.	1.30	1.40	1.90	2.40	3.30	3.90	5.60	7.30

Special net prices on small sizes quoted on application. Galvanized at special prices. Larger sizes. see B737.

B2366 goes inside 3-in. pipe.



B2366

Black, ea..75c.  
Galv., ea. 90c.

HORIZONTAL



B2367

LEATHER DISC  
IRON CHECK VALVES.

Pipe Sizes..... inches	¾	1	1¼	1½	2
Horizontal.....each	1.00	1.25	1.50	2.00	2.75
Vertical..... " "	1.50	1.75	2.00	2.50	3.00

Larger Sizes quoted on application. Galvanized Special.

VERTICAL



B2368

BUCKEYE HORIZONTAL CHECK VALVES

Are made with Brass Valve Seat and Poppet Valve; the cap in the top giving easy access to the working parts without disturbing the pipe.

Pipe Sizes..... inches	¾	1	1¼	1½	2
Plain.....each	1.00	1.25	1.50	2.00	2.75
Galvanized..... " "	1.50	1.75	2.25	3.00	4.00

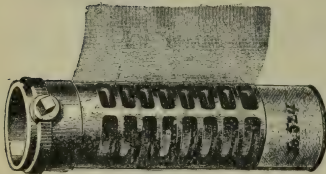


B2369



# SUCTION STRAINERS

WITH SET SCREW



B2370

MUSHROOM  
STRAINER



B2371

GLOBE STRAINER  
for Hose



B2372

Size, inches.....	1	1¼	1½	2	2½	3
B2370—Galvanized, and Gauze Covered...each	.28	.32	.36	.50	....	....
"      Not Covered....."	.22	.24	.26	.40	....	....
Black,      "      "....."	.18	.20	.24	.36	....	....
B2371—Mushroom, Blk....."	....	1.00	....	*1.00	....	....
B2372—Globe      "      "....."	....	.50	.65	1.00	1.50	....
"      Galvanized, Special.....	....	....	....	....	....	4

\* Mushroom Strainer for 1¼-in. iron pipe, also for 2-in. hose.

WATER  
CONDUCTOR  
for Pump Spout



B2375

Each, \$1.00.  
Tapped for 1¼-in. pipe.

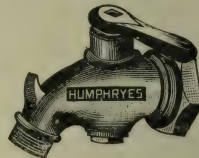
HOSE CLEVIS  
for Pump  
Spout



B2376

Each, 50c.

COCK SPOUT



B2378

No. 1, for pumps with cylinders ¾ inch or less diameter, fitted for 1-inch hose coupling.....each	2.00
No. 2, for pumps with cylinders larger than ¾ inch, fitted for 1¼-inch hose coupling.....each	2.50

GOOSE NECKS  
for Hose



B2379



B2380

B2379		B2380	
¾ in..each	.60	¾ in., ea.	.40
1 " " "	.60	1 " " "	.40
1¼ " " "	.80	1¼ " " "	.50



### MALLEABLE HYDRANT CLAMP

Size Cock to be used with.....inch	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1
Threaded for $\frac{1}{2}$ -in. pipe.....each	.20	.20	.20	.20
"    " $\frac{3}{8}$ -in. pipe.....each	.18	.18	.18	.18
With $\frac{3}{8}$ -in. square hole....."	.15	.15	.15	.15

Always state whether wanted for square rod and size of square, or threaded for gas pipe, and what size pipe. Also state size of cock to be used on.

B2384

### MALLEABLE IRON WOOD ROD COUPLINGS



For 1-inch square Wood Rod, 2 Rivet Holes, per Set, Galvanized.....20c.  
Black.....15c.  
Wood Rod, 10 and 12 ft. lengths, 1 inch square, per foot..... 2c.

B2385

### STEEL PUMP ROD



B2387

### MALLEABLE PUMP ROD COUPLINGS



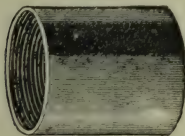
B2386

Couplings Threaded for Solid Rod, $\frac{3}{8}$ -14 thd. or $\frac{7}{16}$ -12 thd., Galvanized.....	per Lb.	.30
Couplings Threaded for Solid Rod $\frac{3}{8}$ -14 one end or $\frac{7}{16}$ -12 other end, Galvanized.....	"	.30
Couplings Threaded for Solid Rod, $\frac{3}{8}$ -14 or $\frac{7}{16}$ -12 one end and other end for $\frac{3}{8}$ -inch or $\frac{1}{2}$ -inch gas pipe, Galvanized.....	"	.50
Steel Pump Rod, Polished or Galvanized, $\frac{3}{8}$ -inch, $\frac{7}{16}$ -inch, or $\frac{1}{2}$ -inch, Galvanized.....	"	.08

### TURNED COUPLING

### PLAIN MALLEABLE REDUCING COUPLING

### RECESSED COUPLINGS



B2388



B2389



B2390

Pipe Thread.... inches	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2
Right Hand Thread ...	.12	.25	.60
Right and Left Thread .	.24	.40	.60

To go inside 2-inch pipe Threaded  $1\frac{1}{4}$ x1-inch Pipe For Tool Rod and for Each, Black.....20c. Well Pipe.  
Galvanized..35c.

### RECESSED COUPLINGS—B2390

Pipe Sizes.....inches	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
Black, Right Hand....	.30	.35	.45	.55	.70	.95	1.40	1.85	2.25
Galvanized, Right Hand....	.35	.40	.55	.70	.90	1.20	1.70	2.15	3.25

### EXTRA LONG TOOL ROD COUPLINGS

Not illustrated. Quoted on application.

## BRASS JACKET DRIVE WELL POINTS

### GALVANIZED



**B2391**

Double Screen Points have perforated brass jacket with woven brass wire screen (usually 60 gauze) underneath. The Single Screen Points have only the perforated sheet brass jacket. This jacket may have small or large holes as desired, known as fine, medium, or coarse.

The listed length of points does not include the pointed head or plug.

Inches	No.	Length of Point	Jacket	Aggregate Number Square Inch Openings	PRICES PER DOZEN			
					No. 60 Gauze	No. 80 Gauze	No. 90 Gauze	No. 100 Gauze
1	74	2 Feet	18 Inches	15	33.00	46.00	52.00	62.00
1	76	2½ "	24 "	20	42.00	56.00	64.00	78.00
1	78	3 "	30 "	25	51.00	66.00	76.00	94.00
1	80	3½ "	36 "	30	60.00	76.00	88.00	120.00
1	82	4 "	42 "	35	69.00	86.00	100.00	136.00
1¼	86	20 Inches	14 "	15	30.00	42.00	50.00	64.00
1¼	90	2 Feet	18 "	20	36.00	52.00	60.00	80.00
1¼	94	2½ "	24 "	26½	46.00	64.00	75.00	100.00
1¼	98	3 "	30 "	33	56.00	76.00	90.00	120.00
1¼	100	3½ "	36 "	39½	66.00	88.00	105.00	140.00
1¼	102	4 "	42 "	45½	76.00	100.00	120.00	160.00
1¼	136	2 "	18 "	22½	48.00	65.00	78.00	94.00
1½	140	2½ "	24 "	30	60.00	80.00	96.00	118.00
1½	144	3 "	30 "	37½	72.00	95.00	114.00	142.00
1½	146	3½ "	36 "	45	84.00	110.00	132.00	166.00
1½	148	4 "	42 "	52½	96.00	125.00	150.00	188.00
2	160	2 "	18 "	26	75.00	94.00	110.00	130.00
2	164	2½ "	24 "	35	90.00	112.00	132.00	160.00
2	168	3 "	30 "	43½	105.00	130.00	154.00	190.00
2	170	3½ "	36 "	52½	120.00	148.00	176.00	220.00
2	172	4 "	42 "	62	135.00	166.00	198.00	250.00
2	176	5 "	54 "	78½	165.00	202.00	242.00	310.00
2	180	6 "	66 "	96	195.00	238.00	286.00	370.00
2½	183	2½ "	24 "	40	155.00	195.00	220.00	250.00
2½	184	3 "	30 "	50	180.00	230.00	260.00	300.00
2½	188	4 "	42 "	70	230.00	300.00	340.00	400.00
3	200	3 "	30 "	67½	240.00	310.00	340.00	410.00
3	204	4 "	42 "	94½	300.00	390.00	430.00	520.00

### 3½-Inch Points—Galvanized

3½	202	3 Feet	30 Inches	70	300.00	390.00	430.00	520.00
3½	206	4 "	42 "	98	360.00	470.00	520.00	630.00

### 4-Inch Points—Galvanized

4	216	4 Feet	36 Inches	90	480.00	560.00	600.00	700.00
4	220	6 "	60 "	150	630.00	760.00	840.00	1000.00
4½	Price (end to end of pipe).....Per ft.				4.00	5.00	5.50	6.00
5	"	"	"	"	5.00	6.50	7.25	8.00
6	"	"	"	"	5.80	7.25	8.00	9.00
7	"	"	"	"	7.00	8.50	9.25	10.50
8	"	"	"	"	8.50	10.00	11.00	12.00
9	"	"	"	"	11.00	13.00	14.00	15.00
10	"	"	"	"	13.00	15.25	16.50	18.00
12	"	"	"	"	16.00	18.50	20.00	22.00

Points 4½ inches and larger are regularly furnished open at both ends, but can be furnished with drive plug, if desired. Points 4 inches and smaller are furnished with drive plug as illustrated, unless ordered with open ends.

Points covered with 20, 30, 40, or 50 gauze at special prices.

Points longer than listed above are listed at proportionately higher prices.

**BRASS JACKET TUBULAR WELL POINTS****B2393**

Trade No.	Inside Diameter Inches	Length of Pipe Inches	Length of Jacket Inches	No. of Holes	PRICE PER DOZEN			
					No. 60 Gauze	No. 80 Gauze	No. 90 Gauze	No. 100 Gauze
73	1	30	18	72	34.00	45.00	50.00	55.00
75	1	36	18	72	38.00	50.00	56.00	66.00
75½	1	36	24	96	43.00	55.00	62.00	77.00
77	1	42	24	96	47.00	60.00	68.00	82.00
77½	1	42	30	120	52.00	65.00	74.00	93.00
79	1	48	30	120	56.00	70.00	80.00	98.00
79½	1	48	36	144	61.00	75.00	86.00	109.00
81½	1	54	42	144	70.00	85.00	98.00	125.00
116	1¼	24	18	100	36.00	52.00	60.00	80.00
117	1¼	30	18	100	41.00	57.00	65.00	85.00
117½	1¼	30	24	130	46.00	64.00	75.00	100.00
118	1¼	36	24	130	51.00	68.00	80.00	105.00
121	1¼	36	30	165	56.00	76.00	90.00	120.00
122	1¼	42	30	165	61.00	80.00	95.00	125.00
123	1¼	48	30	165	66.00	85.00	100.00	130.00
125	1¼	42	36	200	66.00	88.00	105.00	140.00
126	1¼	48	36	200	71.00	92.00	110.00	145.00
128	1¼	60	36	200	81.00	102.00	120.00	155.00
130	1¼	54	42	230	81.00	104.00	125.00	165.00

1½-inch and 2-inch points quoted on application.

**WASHER DRIVE WELL POINTS****B2394**

Trade No.	Inside Diameter Inches	Length of Pipe Inches	No. of Holes	PRICE PER DOZEN			
				No. 60 Gauze	No. 80 Gauze	No. 90 Gauze	No. 100 Gauze
301	1¼	24	60	36.00	52.00	60.00	80.00
302	1¼	30	80	46.00	64.00	75.00	100.00
303	1¼	36	100	56.00	76.00	90.00	120.00
304	1¼	42	120	66.00	88.00	105.00	140.00
305	1¼	48	140	76.00	100.00	120.00	160.00
320	1½	24	80	48.00	65.00	78.00	94.00
321	1½	30	110	60.00	80.00	96.00	118.00
322	1½	36	130	72.00	95.00	114.00	142.00
323	1½	42	150	84.00	110.00	132.00	160.00

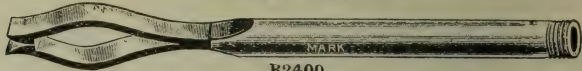
**COOK'S SEAMLESS BRASS SLOTTED STRAINER****B2395**

State Diameter of Well and Length Strainer desired, and whether Fine, Coarse, or Medium. Will quote net price.

These Strainers can be furnished with one or both ends threaded inside or outside for Iron Pipe if desired.



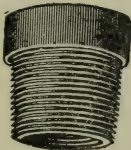
VALVE GRAB



B2400

Price each, \$1.50.

SCREEN SETTER  
AND PULLER



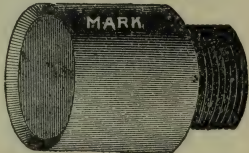
B2401

HYDRAULIC  
BLIND VALVE



B2402

PIPE DRIFT  
FOR TUBULAR WELL  
PIPE



B2403

2 inch.....each	1.40	1 inch.....each	1.40	2 inch.....each	5.00
2½ "....."	2.00	1½ "....."	2.00	2½ "....."	7.00
3 "....."	2.80	2 "....."	5.00	3 "....."	10.00



WOOD  
DRIVE BLOCK

B2404

For 1¼-inch Wells

Each, \$1.50.

SMALL BRASS SAND PUMP

For 1¼-inch Wells



B2405

Each, \$1.50.

HOLLOW  
STEEL DRIVE HEAD



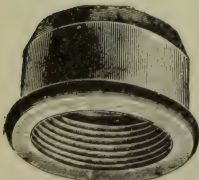
B2407

SOLID  
STEEL DRIVE HEAD



B2408

MALLEABLE  
DRIVE CAP



B2406

Pipe Size .....	inches	1¼	1½	2	2½	3	3½	4	6
B2406—Malleable Drive Cap.....ea.		.20	.24	.44	1.00	1.25	.....	1.50	.....
B2407—Hollow Drive Head....."		.....	.....	4.00	5.20	6.40	8.00	.....	.....
B2408—Solid "....."		1.50	2.00	2.50	6.00	9.00	.....	16.00	30.00

WELL DRILLS

SAND PUMP DRILLS

ROCK DRILLS

PADDY DRILL



B2410



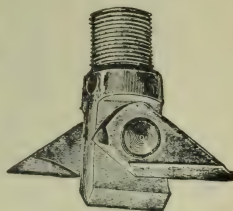
B2411



B2412



B2413



B2414

Size Well Pipe.....inches	2	2½	3	3½	4	4½	5	6
B2410—with Coupling .....each	2.00	3.00	4.00	.....	.....	.....	.....	.....
B2411—Solid, with Marble... “	2.40	3.75	5.20	8.60	11.00	.....	.....	.....
B2412—Rock Drill..... “	3.75	4.75	5.25	7.00	9.50	14.00	18.50	23.00
B2413—Z “ “..... “	3.35	4.75	5.00	6.75	9.50	11.50	21.00	24.00
B2414—Paddy..... “	6.00	11.00	13.00	20.00	27.00	34.00	.....	.....

EXPANSION  
ROCK DRILL

B2415



ROCK DRILL

B2416



ROCK REAMER

B2417



TWIST AUGER

B2418



Size Well Pipe.....inches	2	2½	3
B2415—Expansion Rock Drill .....each	3.60	6.00	7.60
B2416—Plain “ “..... “	4.80	6.60	8.50
B2417— “ “ Reamer..... “	4.80	6.60	8.50
B2418—Twist Auger..... “	4.15	5.80	6.60
Pod Auger (not Illustrated).... “	14.40	15.20	19.20



COMMON SAND  
PUMP

B2420

Size Well.....inches	2	2½	3	4	5	6	7	8
Each.....	3.00	3.50	3.75	4.75	6.00	7.00	8.50	10.00



HORN  
SOCKET

B2421

¾ inch, \$3.80. 1 inch, \$4.25. 1½ inch, \$7.40.

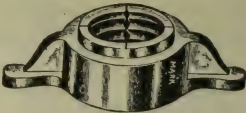


SMALL JARS

B2422

1 inch.....10.00

PIPE PULLER RING AND JAWS



B2424

PIPE PULLER RING

Price List of Ring Includes Jaws for One Size Pipe

No. 2, with Jaws for 2-inch Pipe (or smaller size).....	2.75
Extra Jaws per Set: ¾ in., 90c; 1 in., 80c; 1¼ in., 75c; 1½ in., 50c; 2 in., 50c	
No. 3, with Jaws for 3-inch Pipe (or smaller size).....	5.00
Extra Jaws per Set: 2 in., 80c; 2½ in., 75c; 3 in., 75c.	
No. 4, with Jaws for 4-inch Pipe (or smaller size).....	8.50
Extra Jaws per Set: 3 in., \$2.25; 3½ in., \$2.00; 4 in., \$1.75.	
No. 6, with Jaws for 6-inch Pipe (or smaller size).....	12.00
Extra Jaws per Set: 4 in., \$3.00; 4½ in., \$2.75; 5 in., \$2.50; 6 in., \$2.25	
No. 8, with Jaws for 8-inch Pipe (or smaller size).....	15.00
Extra Jaws per Set: 5 in., \$4.50; 6 in., \$4.00; 7 in., \$3.50; 8 in., \$3.00.	
No. 10, with Jaws for 10-inch Pipe (or smaller size) .....	25.00
Extra Jaws per Set: 8 in., \$7.00; 9 in., \$6.00; 10 in., \$5.00.	

Nos. 8 and 10 are for 4 Jack Screws. See Jacks on other pages.

TAPER PULLING TAPS

For Pulling Hollow Rods



B2425

Size	Catches Pipe, Inches	Price Each
1	¾ to 1¼	4.50
2	¾ " 2	6.25
3	2 " 3	12.00

Threaded for Pipe, No. 1, 1 in.; No. 2, 1¼ in.; No. 3, 1½ in,

Can furnish on special order Pulling Taps with Female Thread to catch over outside of lost pipe or rod. Prices on application.

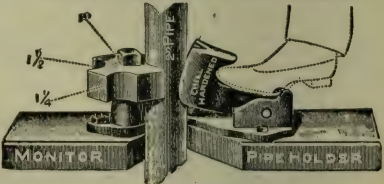
INSIDE  
PIPE CUTTER

B2426

Prices on application.



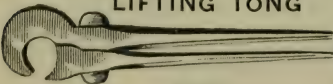
"MONITOR" PIPE HOLDER



B2427

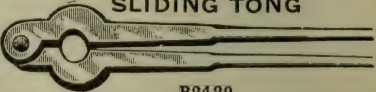
Holds pipe 1 in. to 2 in. inclusive, \$6.00.

LIFTING TONG



B2428

SLIDING TONG



B2429

Pipe Size.....inches	¾	1	1¼	1½	2
B2428 .....each	4.00	4.50	5.00	5.50	6.00
B2429 ....."	4.00	4.50	5.00	5.50	6.00

JAR

BITT

STEM

ROPE SOCKETS

TEMPER SCREW

**DRILLING TOOLS**

**FOR GAS, OIL WELL, AND  
WATER WELL WORK**



B2430

**TOOL WRENCH**



B2431

**BARRETT WRENCH JACK**



B2432



WING.  
B2433



PATENT  
B2434

**BAILER  
VALVE**



B2435

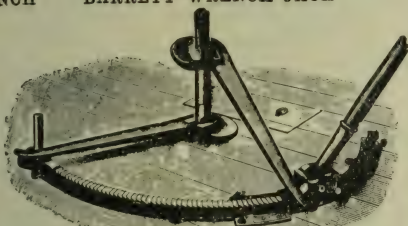


B2436

**ELEVATORS**

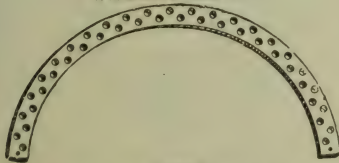


B2437

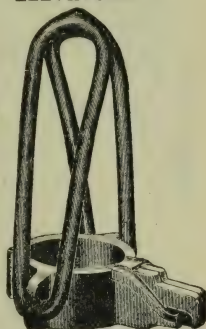


B2438

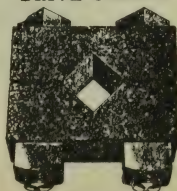
**WRENCH CIRCLE**



B2439



B2440  
**DRIVE CLAMPS**



B2441

Tools on this page quoted on application. State clearly your requirements, such as dimensions, also style and size of thread on bitts, etc.



## SQUARE KITCHEN SINKS



## CAST-IRON—B2460

Size..... inches	12x18	14x20	15x27	16x24	16x28	16x30	18x24	18x30	18x32	18x36
Painted.....each	1.25	1.50	2.00	1.90	2.10	2.25	2.10	2.50	2.75	3.25
Enameled..... "	2.40	3.00	3.75	3.25	3.75	3.90	3.50	4.25	4.65	4.75
Size..... inches	20x24	20x30	20x36	20x38	20x40	20x42	20x48	22x42	22x62	24x50
Painted.....each	2.40	3.00	3.70	3.80	4.00	4.25	5.25	4.75	12.00	7.50
Enameled..... "	3.75	4.50	5.25	5.50	5.75	6.00	6.75	6.25	30.00	9.00

Add to list Painted or Enameled for Patent Overflow \$1.50.

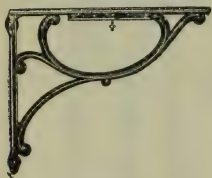
Add to list, if with Patent Overflow; Plug Strainer: Painted, \$1.75; Enamel, \$2.00.

## PRESSED STEEL SINKS—B2461

Size..... inches	16x24	*18x24	18x30	18x36	20x30	20x36	20x40
Painted..... each	2.00	2.25	2.50	3.25	3.00	3.75	4.50
Galvanized..... "	2.50	2.75	3.25	4.00	3.75	4.50	5.25

\*The 18x24 Steel Sink is a special size, not made by all manufacturers.

## SINK BRACKET



B2462

Black per Pair:

No. 1 \$0.70. No. 2 \$0.90.

No. 1 for sinks up to 18 inches wide.

No. 2 for sinks up to 22 inches wide.

## OPEN SINK STRAINER



B2465

Painted ..per dozen \$1.25

Enameled. " 2.25

Nickel Plated " 4.00

SINK COUPLING  
For Lead Pipe

B2463

Plain.... per dozen \$1.25

SINK COUPLING  
TAPPED  
For Iron Pipe

B2464

1 1/4-in.....each \$0.60

1 1/2 " ..... " .60

SINK PLUG, WITH  
RUBBER STOPPER

B2466

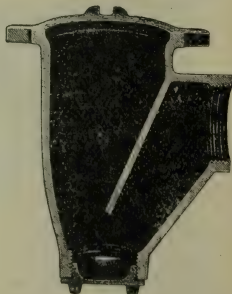
Painted...per dozen \$3.50

Enameled. " 5.00

Nickel Plated " 8.00

## CAST-IRON SINK TRAP

Tapped for Iron Pipe



B2467

Plain, Each:

Tapped, 1 1/4-inch....\$0.70

" 1 1/2 " .... .80

Always state diameter, also centre to centre of bolt holes, when ordering extra sink strainers.

**CESSPOOLS, ETC.**

**CESSPOOL, WITH BELL TRAP**

**CESSPOOL, WITH BELL TRAP AND HINGED STRAINER**

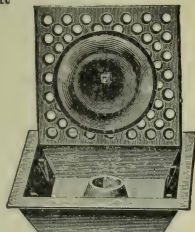
**CELLAR TRAP**



**B2470**



**B2471**



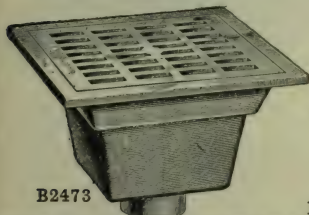
**B2472**

Painted	Inches.....	Square	6 x 6	9 x 9	12 x 12	13 x 13
B2470	Cesspool with Bell Trap.....	each	.75	1.00	....	2.50
B2471	Cesspool Hinged Lid and Bell Trap..	"	1.00	1.35	....	3.00
B2472	Cellar Trap.....	"	....	1.25	1.60	....

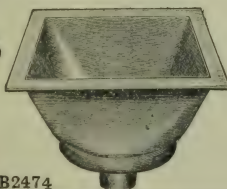
**EXTRA HEAVY CESSPOOL, With Bell Trap and Grating**

**HARRIS SLOP SINK With Bell Trap and 2-inch Outlet**

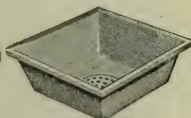
**HYDRANT CESSPOOL Plain**



**B2473**



**B2474**

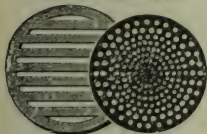


**B2475**

Dimen., inches	Painted	Dimen., inches	Painted	Dimen., inches	Painted
16 x 16 x 10	4.50	12 x 12	2.00	12 x 12 x 6	1.00
12 x 12 x 10	3.75	14 x 14	2.25	14 x 14 x 6	1.25
		16 x 16	2.50	16 x 16 x 6	1.50

**ROUND GRATES**

**CISTERN RING AND COVER**

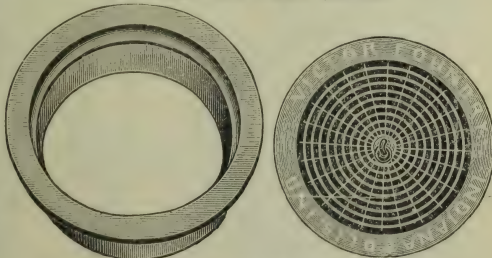


**B2476 B2477**

Diameter and Price each.

**Bar Perforated**

Ins.	Each	Ins.	Each
5½	.15	6½	.30
8¼	.25	8	.35
10	.45	10	.50
12	.55	12	.60
15	.75	16	.65
.....	.....	18	.65



**B2478**

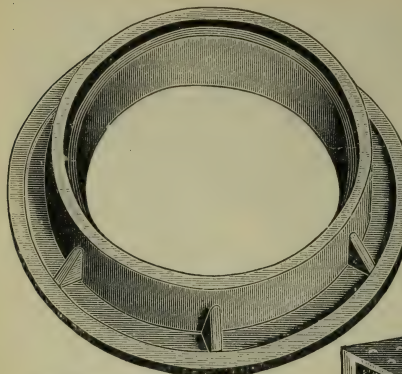
Diam.....	inches	16	18	20	22	24
Ring and Cover.....		3.50	3.75	7.00	8.00	9.00

18 Perf'rat'd, Dished, 75¢

Coal Hole Rings special.

## SEWER CASTINGS

## MANHOLE RING, B2479



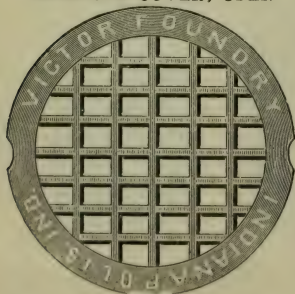
MANHOLE COVER, SOLID



B2480

With or Without Vent Holes.  
No. 1, for B2481 Manhole Ring,  
Diam. 24 in., Wt. 139 lbs. ....\$3.00

MANHOLE COVER, OPEN



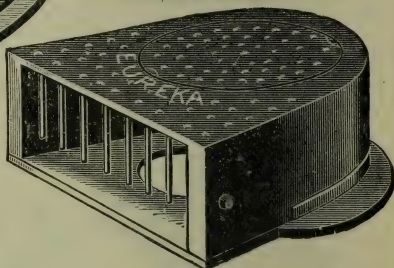
B2481

No. 2, for B2481 Manhole Ring,  
Diam. 24 in., Wt. 115 lbs. ....\$2.75

Number	Outside Diameter Flange Inches	Diameter of Lid Inches	Height Inches	Weight of Ring, lbs.	Weight of Cover, lbs.	Price with Cover
80	34	24	7	255	139	7.00
79	34	24	7	220	108	6.50
78	34	24	10	292	140	8.00
77	32	20	9	218	101	6.50
76	28	22	6	152	120	5.00
*75	27	20	4	96	64	3.50

\*Light Cistern Ring pattern.

## EUREKA INLET



B2482

Straight Front, with Round Perpendicular Bars.

Mouth	Discharge Hole	Approx.	Price
24x8 in.	18 in. diam.	270lbs.	6.00
24x12 in.	18 " "	300 " "	7.50

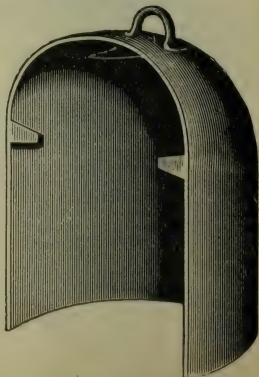
If with one Horizontal Bar, only deduct 25c.  
If with Round Front, add 75c.

## HOOD AND HOOKS—B2483

MANHOLE  
STEP

B2483½

Each, 20c.



20-in. wide, 22-in. high.  
Each, \$1.50.



## PRESSURE HOUSE TANKS

Size of Tank: 42 inches high; 13 inches diameter; capacity, 24 gallons.

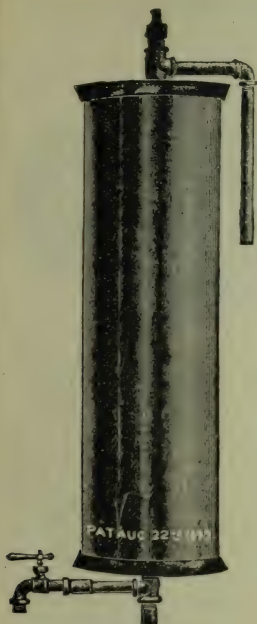
One Size only: One Inch.

Price, including Relief Valve and Nickel

Bibb..... \$19.00

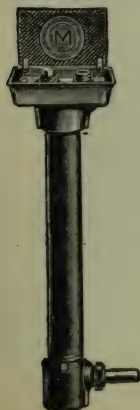
They are made of heavy galvanized sheet steel with cast-iron ends, and are tested under one hundred pounds pressure. It is impossible for these tanks to overflow and flood the house, and as the water is forced in at the bottom and out at the top it is always fresh. They can be used with any kind of pumping outfit, and can be placed in any convenient position, either higher or lower than stock tanks, as the water is forced the entire distance.

A Relief Valve should be placed on line of pipe near the pump to prevent any possible chance of damage, should the pipe beyond the House Tank become closed by freezing or otherwise.



B2484

FLUSH  
HYDRANT



B2485

POST  
HYDRANT



B2486

## HYDRANTS

For outdoor hose connection to distributing pipes, conveying water from Pneumatic Water Supply System or Elevated Tank.

### PRICE LIST

To set in ground.....feet	2	2½ or 3	3½ or 4	4½ or 5
Post Hydrant, ¾ in...each	9.00	10.00	11.00	12.00
Flush " ¾ " " " "	7.50	8.50	9.50	10.50
Post " 1 " " " "	11.50	12.50	13.50	14.50
Flush " 1 " " " "	9.00	10.00	11.00	12.00

Post Hydrants can be furnished Self-closing at special price.



## LEADER DOMESTIC WATER WORKS OUTFITS

**Fig. 27** outfit has many new and commendable features, chief among them being our Improved Automatic Air Valve, which supplies and maintains the correct amount of air in the tank. The pump is of new design, and possesses many valuable features. An outfit of this type will usually deliver 10 per cent more water than a plain tank outfit of the same size. A complete outfit suitable for a family of eight persons, where water is used for kitchen, laundry, and bath-room purposes, consists of the following:

One 30-inch x 8-foot Leader Tank with Automatic Equipment.

One Double Acting Hand Force Pump with Brass Lined Cylinder.

One Pressure Gauge. One Water Gauge.

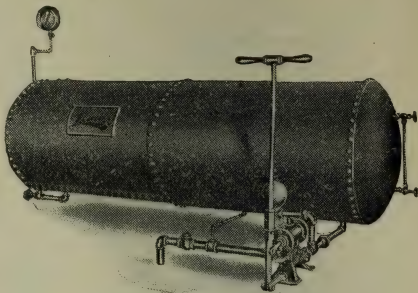
One 1-inch Angle Valve. One  $\frac{3}{4}$ -inch Stop and Waste Cock.

One  $\frac{1}{4}$ -inch Check Valve. One  $\frac{1}{2}$ -inch Hose Bibb.

One  $1\frac{1}{4}$ -inch Check Valve. Two Wood Tank Supports, cut to curvature of Tank.

Together with all pipe and fittings, as shown, cut and fitted, ready to set up.

Tank has a total capacity of 295 gallons and will deliver 215 gallons of water. Capacity can be increased or reduced to suit the conditions by using a larger or smaller tank.



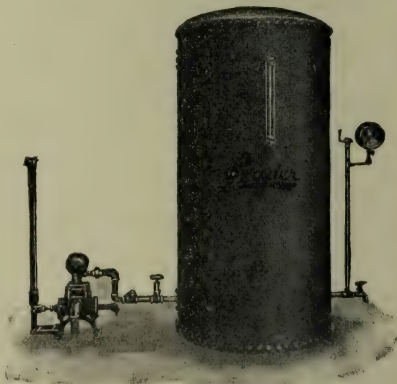
**B2487. Price of Outfit, \$115.00**

**Fig. 26** Leader Water Works outfit suitable for a medium sized residence, requires but very little space for supplying water to kitchen, laundry, and bath-room. The pump is especially designed for pumping both air and water and can be adjusted to pump either air or water. A pump of this type will deliver water from a well or cistern which may be nearby, or several hundred feet distant, but in no case should the pump be placed more than twenty feet above the level of the water in the well. The tank has a total capacity of 315 gallons and will deliver 225 gallons of water when pumped to 40 pounds pressure. The complete outfit consists of the following:

One 36 inch x 6-foot Leader Tank. One Fig. 42 Leader Special Air and Water Force Pump with Brass Lined Cylinder. One Pressure Gauge. One Water Gauge. One 1-inch Gate Valve. One 1-inch Check Valve. One  $\frac{3}{4}$ -inch Stop and Waste Cock. One  $\frac{1}{2}$  inch Hose Bibb.

Together with pipe and fittings, cut and fitted, as shown, ready to set up.

The capacity of the above tank can be increased or reduced to suit conditions, and if preferred the tank can be placed horizontally instead of vertically as shown.



**B2488. Price of Outfit, \$100.00**

## LEADER COMPOSITE OUTFIT

B2489

WITH WINDMILL POWER PUMP

Fig. 23 illustrates our Leader Water Supply System operated by a windmill. It is suitable for country and suburban homes, neighborhood water works, stock and dairy farms, etc. This outfit consists of:

One 48-inch x24-foot Leader Tank, total capacity 2260 gallons.

One Leader Automatic Windmill, with 10-foot Wheel and four post Tower, 40 feet high.

One Fig. 41 Combination Air and Water Pump.

One 1½-inch Gate Valve.

One 1½-inch Swing Check Valve.

One Water Gauge.

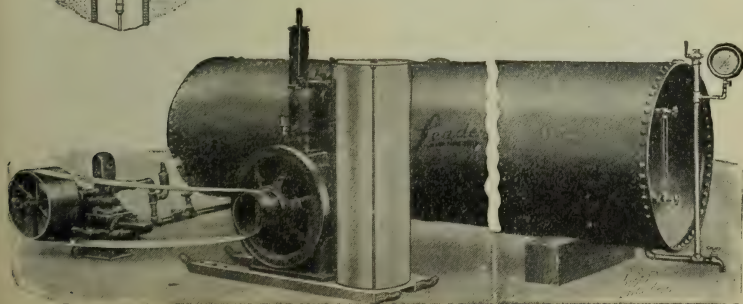
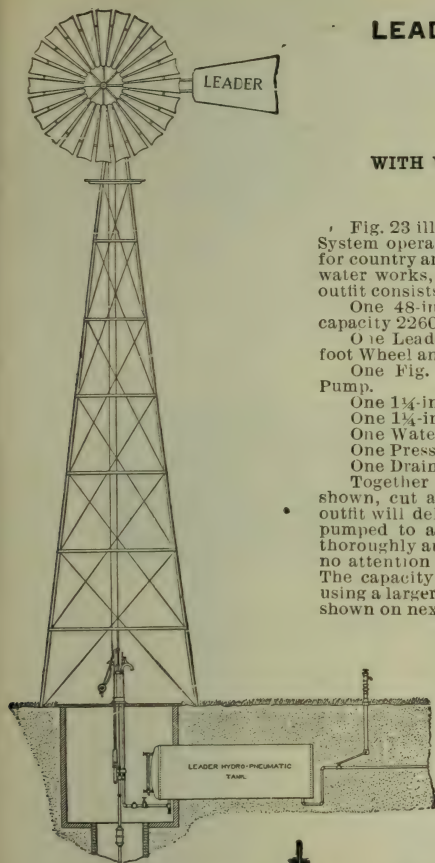
One Pressure Gauge.

One Drain Cock.

Together with all pipes and fittings as shown, cut and fitted, ready to set up. This outfit will deliver 1600 gallons of water when pumped to a pressure of 40 pounds. Being thoroughly automatic in operation, it requires no attention other than the oiling of the mill. The capacity can be increased or reduced by using a larger or smaller tank of which a list is shown on next page.

Prices on application.

B2490 See price  
next page.



## LEADER OUTFIT WITH POWER PUMP AND GASOLINE ENGINE

B2490 as illustrated bottom of preceding page.

Fig. 30 illustrates our Leader Water Supply System as equipped with gasoline engine and power pump. This is a favorite outfit for farm use where power is required for pumping water and other purposes. The pump is especially designed for this work, the castings are all made from metal patterns which insure both strength and ease of operation. This style outfit varies in size from 500 to 3000 gallons capacity. The size illustrated has a tank capacity of 1000 gallons and a pumping capacity of 700 gallons per hour. Complete outfit consists of the following:

One 42-inch x 14-foot Leader Tank, total capacity 1000 gallons.

One Fig. 48 Double Acting Power Force Pump with Brass Lined Cylinder.

One McVicker 2-H. P. Gasoline Engine.

One Pressure Gauge. One Water Gauge.

One 1½-inch Gate Valve. One 1½-inch Check Valve. One 1-inch Relief Valve.

One ½-inch Hose Bibb. One ¾-inch Stop and Waste Cock.

Two Wood Tank Supports, cut to curvature of tank.

Together with all pipe, fittings and belt, as shown cut and fitted, ready to set up.

**List Price of Complete Outfit, \$455.00**

An electric motor can be furnished instead of gasoline engine, at special price.

## LEADER PNEUMATIC TANKS



B2491

SIZE		Weights	Capacity in Gallons	List Price Black	List Price Galvanized	SIZE		Weights	Capacity in Gallons	List Price Black	List Price Galvanized
Diameter in Inches	Length in Feet					Diameter in Inches	Length in Feet				
24	6	370	140	40.00	56.50	42	10	1685	720	113.00	175.00
24	8	445	190	50.00	71.00	42	12	1953	865	140.00	211.00
24	10	525	235	56.00	80.50	42	14	2215	1000	155.00	238.00
30	6	558	220	52.00	74.00	42	16	2484	1150	168.00	260.00
30	8	677	295	64.00	92.00	48	10	2066	1000	160.00	.....
30	10	795	365	73.00	105.00	48	12	2366	1130	178.00	.....
30	12	914	440	82.00	120.00	48	14	2665	1300	195.00	.....
36	6	760	315	66.00	93.00	48	16	2963	1500	217.00	.....
36	8	926	420	78.00	112.50	48	18	3264	1700	250.00	.....
36	10	1090	525	92.00	132.00	48	20	3565	1880	280.00	.....
36	12	1253	630	95.00	140.00	48	24	4167	2260	311.00	.....
42	8	1422	575	95.00	148.00						

If with **Automatic Air Attachment** add to list \$20.00.

Manholes complete each list, \$15.00.

Water gauge complete with glass and rods, list \$2.25.

Pressure gauge 5" register 100 lbs., list \$2.25.

Prices of tanks are for tanks only, nothing else being furnished without extra charge.

Prices of tanks of special size either black or galvanized quoted on application.

All Leader Pneumatic Tanks have **double riveted** longitudinal seams and are tested to 125 pounds air pressure.

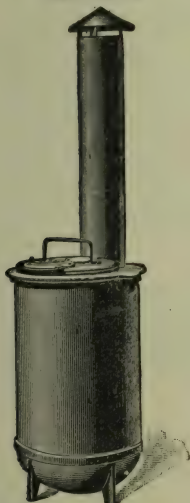
# STOCK FOUNTAIN FOR HOGS AND SHEEP



B2492

Price Each, 2.50

## TANK HEATERS CAST-IRON



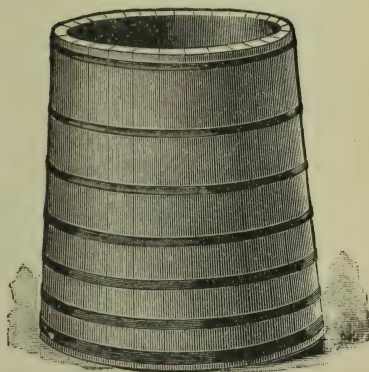
B2493

Each, 7.50

With Basket Grate. Made in one piece. Heavy, compact and durable. Nothing about it to get out of order. Burns coal, wood or cobs.

Diameter, 14 inches.  
Weight, 102 pounds.

## ROUND WOOD TANK



B2494

Dimensions, Capacity, and Prices quoted on application.

Made of Pine or Cypress.

Riveted Hoops or Lug Hoops.

Can be furnished in Shallow Pattern for Stock Watering Tanks.

Towers, Covers, etc., quoted on application.



## ROUND END GALVANIZED STEEL TANKS

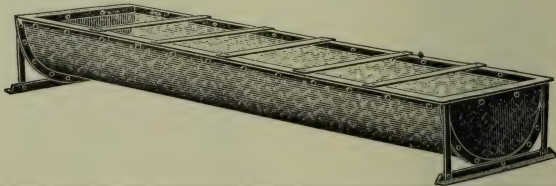


B2495

Number	Width Feet	Height Feet	Length Feet	Capacity Bbls.	Weight Lbs.	Price	Number	Width Feet	Height Feet	Length Feet	Capacity Bbls.	Weight Lbs.	Price
101	2	2	4	3 3/4	70	7.00	119	4	2	14	26	300	29.50
102	2	2	5	4 3/4	86	8.70	120	4	2	16	30	372	34.00
103	2	2	6	5 3/4	103	10.25	121	4	2 1/2	8	17	190	20.00
104	2	2	7	6 1/2	119	11.25	122	4	2 1/2	10	24	247	24.00
105	2	2	8	7 1/2	137	12.25	123	4	2 1/2	16	38	400	38.00
106	2	2	10	9 1/2	160	15.00	124	4	3	8	23	215	22.00
107	2	2 1/2	8	9 1/2	150	14.00	125	4	3	10	29	277	28.50
108	2 1/2	2 1/2	8	9 1/2	144	13.00	126	4	5	10	47	440	41.00
109	2 1/2	2 1/2	10	12	180	16.80	127	5	2	16	38	412	40.00
110	2 1/2	2 1/2	8	12	150	15.00	128	5	2 1/2	16	47	435	45.00
111	3	2 1/2	8	11 1/2	152	14.00	129	6	2	8	23 1/2	240	23.00
112	3	2	10	14	185	17.50	130	6	2	10	28 1/2	285	27.50
113	3	2 1/2	8	14	166	16.00	131	6	2	16	45	490	45.50
114	3	2 1/2	10	18	210	20.00	132	6	2 1/2	8	28 1/2	255	26.00
115	3	3	10	21	235	23.75	133	6	3	10	35 1/2	300	29.50
116	4	2	8	15	173	18.00	134	6	3	10	42 1/2	325	32.50
117	4	2	10	19	210	21.50	135	6	4	10	56	434	44.00
118	4	2	12	22	255	25.75	136	6	5	10	70	540	54.00

The above Tanks are shipped set up ready for use.

## GALVANIZED TROUGHS — B2496



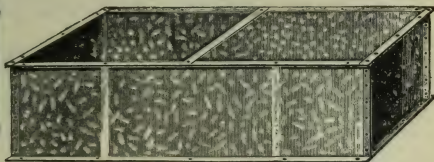
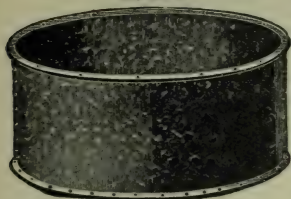
B2496						B2496 1/2					
No.	Width Inches	Height Inches	Length Feet	Capacity Gallons	Price per Foot	No.	Width Inches	Height Inches	Length Feet	Capacity Gallons	Price per Foot
81—Hog Trough	14	6 1/2	6	12	.70	*84 Watering Trough	21	10 1/2	6	30	.80
82— " "	14	6 1/2	8	16	.70	*85 " "	21	10 1/2	8	50	.80
83— " "	14	6 1/2	10	20	.70	*86 " "	23	11 1/2	8	65	.90
						*87 " "	21	11 1/2	10	85	.90

\*The Watering Troughs are not provided with so many cross bars as the Hog Troughs—only enough to brace it.

# GALVANIZED STEEL TANKS

## ROUND

## RECTANGULAR



B2497

B2498

Number	Diameter Feet	Height Feet	Capacity Barrels	Price
1	3	2	3 1/2	8.00
2	4	2	6	9.50
3	4	2 1/2	7	10.75
4	4	3	9	12.75
5	4	4	12	16.00
6	4	5	14	19.00
7	4	6	18	23.75
8	4	8	24	26.00
9	5	2	9 1/2	13.00
10	5	2 1/2	12	14.50
11	5	3	14	15.50
12	5	4	19	21.00
13	5	5	24	23.75
14	5	6	28	28.00
15	5	8	37 1/2	33.00
16	5 1/2	8	45	39.00
17	6	2	14	16.00
18	6	2 1/2	17	17.50
19	6	3	20	20.00
20	6	4	27	25.00
21	6	5	34	30.00
*22	8	2	24	28.00
*23	8	2 1/2	30	30.00
*24	10	2	37 1/2	39.00
*25	10	2 1/2	46	42.00
*26	12	2	54	53.00
*27	12	2 1/2	67 1/2	58.00

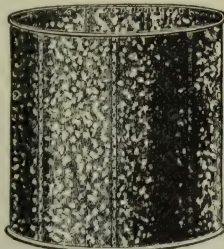
B2499

*50	6	6	41	35.00
*51	6	8	54	43.00
*52	8	5	60	47.50
*53	8	6	72	52.50
*54	8	8	96	65.00
*55	8	10	110	73.00
*56	10	8	150	85.00
*57	10	10	180	95.00
*58	12	10	270	128.00
*59	12	12	324	150.00

Number	Width Feet	Height Feet	Length Feet	Capacity Barrels	Price
201	2	2	4	3 3/4	8.50
202	2	2	5	4 3/4	9.50
203	2	2	6	5 3/4	11.00
205	2	2	8	7 1/2	16.00
207	2	2 1/2	8	9 1/2	18.00
208	2	2 1/2	8	9 1/2	17.50
210	2	2 1/2	8	12	19.50
211	3	2	8	11 1/2	18.75
212	3	2	10	14	22.00
213	3	2 1/2	8	14	20.50
214	3	2 1/2	10	18	24.50
215	3	3	10	21	26.75
216	4	2	8	15	23.00
217	4	2	10	19	25.75
221	4	2 1/2	8	17	25.00
222	4	2 1/2	10	24	28.75
224	4	3	8	23	26.40
225	4	3	10	29	31.75

## ROUND STORAGE TANKS

Nos. 50 to 59



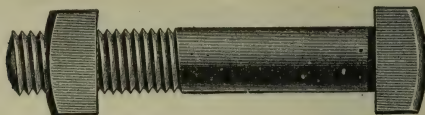
B2499

Shipped Knocked Down

\* Large Tanks, Nos. 22 to 27 and Nos. 50 to 59, are all too large to be shipped set up ready for use except on flat car. Unless otherwise specified in order we ship knocked down, taking a very low rate of freight. We build tanks of any gauge of galvanized steel from No. 20 to No. 16. All prices are based on No. 20, but for our larger sizes we recommend heavier metal. For No. 18 gauge, add 20 per cent to list. For No. 16 gauge, add 40 per cent to list.

## MANUFACTURERS' STANDARD LIST OF MACHINE BOLTS

With Square Heads and Square Nuts, Finished Points



ADOPTED SEPT. 20, 1899 TO TAKE EFFECT OCT. 1, 1899

B2500

### PRICE PER 100

Length Inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
1½	1.70	2.00	2.40	2.80	3.60	5.20	7.20	10.50	15.10
2	1.78	2.12	2.56	3.00	3.86	5.58	7.70	11.20	16.00
2½	1.86	2.24	2.72	3.20	4.12	5.96	8.20	11.90	16.90
3	1.94	2.36	2.88	3.40	4.38	6.34	8.70	12.60	17.80
3½	2.02	2.48	3.04	3.60	4.64	6.72	9.20	13.30	18.70
4	2.10	2.60	3.20	3.80	4.90	7.10	9.70	14.00	19.60
4½	2.18	2.72	3.36	4.00	5.16	7.48	10.20	14.70	20.50
5	2.26	2.84	3.52	4.20	5.42	7.86	10.70	15.40	21.40
5½	2.34	2.96	3.68	4.40	5.68	8.24	11.20	16.10	22.30
6	2.42	3.08	3.84	4.60	5.94	8.62	11.70	16.80	23.20
6½	2.50	3.20	4.00	4.80	6.20	9.00	12.20	17.50	24.10
7	2.58	3.32	4.16	5.00	6.46	9.38	12.70	18.20	25.00
7½	2.66	3.44	4.32	5.20	6.72	9.76	13.20	18.90	25.90
8	2.74	3.56	4.48	5.40	6.98	10.14	13.70	19.60	26.80
9	2.90	3.80	4.80	5.80	7.50	10.90	14.70	21.00	28.60
10	3.06	4.04	5.12	6.20	8.02	11.66	15.70	22.40	30.40
11	3.22	4.28	5.44	6.60	8.54	12.42	16.70	23.80	32.20
12	3.38	4.52	5.76	7.00	9.06	13.18	17.70	25.20	34.00
13	....	....	6.08	7.40	9.58	13.94	18.70	26.60	35.80
14	....	....	6.40	7.80	10.10	14.70	19.70	28.00	37.60
15	....	....	6.72	8.20	10.62	15.46	20.70	29.40	39.40
16	....	....	7.04	8.60	11.14	16.22	21.70	30.80	41.20
17	....	....	....	....	11.66	16.98	22.70	32.20	43.00
18	....	....	....	....	12.18	17.74	23.70	33.60	44.80
19	....	....	....	....	12.70	18.50	24.70	35.00	46.60
20	....	....	....	....	13.22	19.26	25.70	36.40	48.40

The following extras are to be understood as a part of the Machine Bolt List:

Bolts with Hexagon Heads or Hexagon Nuts, 10 per cent extra.

If both Hexagon Heads and Hexagon Nuts, 20 per cent extra.

Special Bolts with irregular Threads and unusual dimensions of Heads or Nuts will be charged extra at the discretion of the Manufacturer.

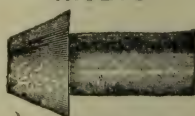
### STUD BOLTS



B2501

With or without Nuts.  
Prices on application.

### RIVETS



B2502

Boiler Rivets, Tank Rivets, etc., any  
style Head. Prices on application.

# ELEVATOR BOLTS

PRICE PER HUNDRED.

FLAT HEAD



B2503

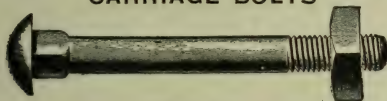
Length Inches	DIAMETER, INCHES			
	$\frac{3}{16}$ and $\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{8}$ and $\frac{1}{2}$
	Flat Head			Key & Reliance Head
$\frac{3}{4}$	2.20	....	....	1.50
$\frac{7}{8}$	2.30	....	....	1.60
1	2.30	3.00	4.00	1.60
$1\frac{1}{8}$	....	....	....	1.70
$1\frac{1}{4}$	2.40	3.20	4.30	1.80
$1\frac{1}{2}$	....	3.40	4.60	....

RELIANCE HEAD



B2504

# CARRIAGE BOLTS



B2505

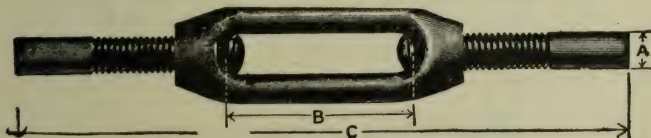
Adopted May 19, 1908, to take affect June 1, 1908.

PRICE PER HUNDRED

Length Inches	DIAMETER, INCHES								Length Inches	DIAMETER, INCHES							
	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$		$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$
$1\frac{1}{2}$	1.00	1.40	1.90	2.20	....	....	....	....	7	1.88	2.72	3.66	4.18	4.98	8.26	11.34	....
$1\frac{3}{4}$	1.04	1.46	1.98	2.29	....	....	....	....	$7\frac{1}{2}$	1.96	2.84	3.82	4.36	5.20	8.60	11.80	....
2	1.08	1.52	2.06	2.38	....	....	....	....	8	2.04	2.96	3.98	4.54	5.42	8.94	12.26	....
$2\frac{1}{4}$	1.12	1.58	2.14	2.47	....	....	....	....	$8\frac{1}{2}$	2.12	3.08	4.14	4.72	5.64	9.28	12.72	....
$2\frac{1}{2}$	1.16	1.64	2.22	2.56	3.00	5.20	7.20	....	9	2.20	3.20	4.30	4.90	5.86	9.62	13.18	....
$2\frac{3}{4}$	1.20	1.70	2.30	2.65	3.11	5.37	7.43	....	$9\frac{1}{2}$	2.28	3.32	4.46	5.08	6.08	9.96	13.64	....
3	1.24	1.76	2.38	2.74	3.22	5.54	7.66	....	10	2.36	3.44	4.62	5.26	6.50	10.30	14.10	....
$3\frac{1}{4}$	1.28	1.82	2.46	2.83	3.33	5.71	7.89	....	11	2.52	3.68	4.94	5.62	6.74	10.98	15.02	....
$3\frac{1}{2}$	1.32	1.88	2.54	2.92	3.44	5.88	8.12	....	12	2.68	3.92	5.26	5.98	7.18	11.66	15.94	....
$3\frac{3}{4}$	1.36	1.94	2.62	3.01	3.55	6.05	8.35	....	13	2.84	4.16	5.58	6.34	7.62	12.34	16.86	....
4	1.40	2.00	2.70	3.10	3.66	6.22	8.58	....	14	3.00	4.40	5.90	6.70	8.06	13.02	17.78	....
$4\frac{1}{4}$	1.44	2.06	2.78	3.19	3.77	6.39	8.81	....	15	3.16	4.64	6.22	7.06	8.50	13.70	18.70	....
$4\frac{1}{2}$	1.48	2.12	2.86	3.28	3.88	6.56	9.04	....	16	3.32	4.88	6.54	7.42	8.94	14.38	19.62	....
$4\frac{3}{4}$	1.52	2.18	2.94	3.37	3.99	6.73	9.27	....	17	3.48	5.12	6.86	7.78	9.38	15.06	20.54	....
5	1.56	2.24	3.02	3.46	4.10	6.90	9.50	....	18	3.64	5.36	7.18	8.14	9.82	15.74	21.46	....
$5\frac{1}{2}$	1.64	2.36	3.18	3.64	4.32	7.24	9.96	....	19	3.80	5.60	7.50	8.50	10.26	16.42	22.38	....
6	1.72	2.48	3.34	3.82	4.54	7.58	10.42	....	20	3.96	5.84	7.82	8.86	10.70	17.10	23.30	....
$6\frac{1}{2}$	1.80	2.60	3.50	4.00	4.76	7.92	10.88	....									

# PRESSED WROUGHT IRON OPEN TURNBUCKLES

WITH RIGHT AND LEFT STUB BOLT ENDS



B2506

Size .....	inches	$\frac{3}{8}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Price .....	each	.40	.42	.45	.48	.50	.63	.75	.88	1.00	1.25	1.58	1.50

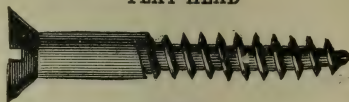


# IRON WOOD SCREWS

ROUND HEAD      FLAT HEAD



B2507

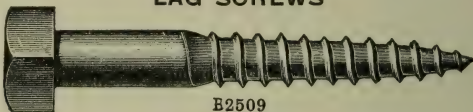


B2508

## PRICE PER GROSS

No.	LENGTH OF SCREW, INCHES																
	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/2	4
0	.72	.72	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	.72	.72	.72	.72	...	...	...	...	...	...	...	...	...	...	...	...	...
2	.72	.72	.72	.72	.72	.74	...	...	...	...	...	...	...	...	...	...	...
3	.72	.72	.72	.72	.75	.78	.80	.88	.98	...	...	...	...	...	...	...	...
4	.72	.72	.75	.75	.78	.82	.84	.92	1.05	...	...	...	...	...	...	...	...
5	...	.75	.78	.78	.82	.85	.87	.98	1.10	1.30	1.45	1.55	1.90	...	...	...	...
6	...	.78	.80	.82	.85	.90	.92	1.05	1.15	1.35	1.50	1.60	2.00	2.40	2.95	...	...
7	...	.82	.84	.86	.90	.94	.98	1.10	1.20	1.45	1.55	1.65	2.10	2.60	3.00	...	...
8	...	.88	.90	.92	.95	1.00	1.05	1.15	1.30	1.50	1.60	1.75	2.20	2.70	3.05	3.90	4.90
9	...	.94	.96	.98	1.00	1.05	1.10	1.20	1.35	1.55	1.65	1.85	2.30	2.80	3.10	4.00	5.10
10	...	...	1.05	1.07	1.10	1.15	1.20	1.30	1.40	1.60	1.75	1.95	2.40	2.90	3.15	4.10	5.20
11	...	...	1.10	1.12	1.15	1.25	1.30	1.40	1.50	1.70	1.85	2.05	2.50	3.00	3.20	4.20	5.30
12	...	...	1.20	1.20	1.25	1.35	1.40	1.55	1.65	1.80	2.00	2.20	2.60	3.10	3.30	4.30	5.40
13	...	...	...	1.25	1.35	1.45	1.60	1.70	1.80	2.00	2.20	2.35	2.70	3.20	3.40	4.40	5.60
14	...	...	...	1.30	1.50	1.55	1.70	1.90	2.00	2.25	2.45	2.65	2.90	3.30	3.50	4.50	5.90
15	...	...	...	...	1.65	1.75	2.00	2.15	2.35	2.60	2.75	3.10	3.30	3.60	3.80	4.75	6.20
16	...	...	...	...	1.80	2.00	2.50	2.50	2.80	2.90	3.10	3.50	3.65	3.90	4.20	4.95	6.50
17	...	...	...	...	...	...	2.70	2.75	3.20	3.50	3.70	3.85	4.20	4.50	4.80	5.40	7.00
18	...	...	...	...	...	...	2.80	3.30	3.80	4.00	4.20	4.55	4.70	5.00	5.50	6.15	7.60
20	...	...	...	...	...	...	5.50	4.00	4.30	4.50	4.80	5.30	5.80	6.10	6.50	7.30	8.60
22	...	...	...	...	...	...	...	4.80	5.10	5.20	5.50	6.10	6.70	7.20	7.50	8.70	9.70
24	...	...	...	...	...	...	...	5.40	5.90	6.00	6.40	6.90	7.50	8.50	8.70	10.20	11.20

## LAG SCREWS



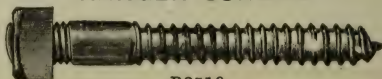
B2509

## PRICE PER HUNDRED

Length	5/16	3/8	7/16	1/2	5/8 & 3/4	3/4	7/8	1	Length	7/8	1/2	5/8 & 3/4	3/4	7/8	1
1 1/2	2.25	2.70	3.15	3.75	...	...	...	...	6 1/2	6.35	7.35	9.50	13.50	19.50	26.00
2	2.45	2.96	3.47	4.11	5.00	...	...	...	7	6.67	7.71	10.00	14.20	20.50	27.30
2 1/2	2.65	3.22	3.79	4.47	5.50	7.90	...	...	7 1/2	6.99	8.07	10.50	14.90	21.50	28.60
3	2.85	3.48	4.11	4.83	6.00	8.60	12.50	...	8	7.31	8.43	11.00	15.60	22.50	29.90
3 1/2	3.05	3.74	4.43	5.19	6.50	9.30	13.50	18.20	9	7.95	9.15	12.00	17.00	24.50	32.50
4	3.25	4.00	4.75	5.55	7.00	10.00	14.50	19.50	10	...	9.87	13.00	18.40	26.50	35.10
4 1/2	3.45	4.26	5.07	5.91	7.50	10.70	15.50	20.80	11	...	10.59	14.00	19.80	28.50	37.70
5	3.65	4.52	5.39	6.27	8.00	11.40	16.50	22.10	12	...	11.31	15.00	21.20	30.50	40.50
5 1/2	3.85	4.78	5.71	6.63	8.50	12.10	17.50	23.40	...	...	...	...	...	...	...
6	4.05	5.04	6.03	7.09	9.00	12.80	18.50	24.70	...	...	...	...	...	...	...

Hexagon Heads add 10% to list.

## HANGER SCREWS



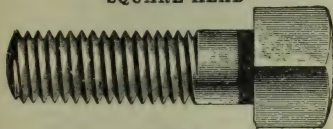
B2510

Special to order.

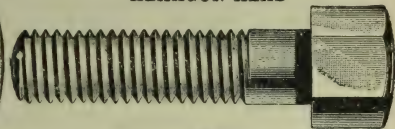
## SQUARE AND HEXAGON HEAD CAP SCREWS

SQUARE HEAD

HEXAGON HEAD



B2511



B2512

## PRICE PER HUNDRED

Diameter of Head	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{7}{8}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Diameter of Screw	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Thrs'd In.	20	18	16	14	12	12	11	10	9	8	7	7
Length under Head to Extreme Point.	$\frac{3}{4}$	3.00	3.25	3.75	4.50	5.70	.....	.....	.....	.....	.....	.....
	$\frac{7}{8}$	3.15	3.40	3.90	4.70	5.80	.....	.....	.....	.....	.....	.....
	1	3.25	3.50	4.00	4.90	5.90	9.25	9.25	.....	.....	.....	.....
	$1\frac{1}{4}$	3.50	3.75	4.25	5.30	6.50	9.50	9.50	12.50	.....	.....	.....
	$1\frac{1}{2}$	3.75	4.00	4.50	5.70	7.10	10.00	10.00	13.50	18.40	.....	.....
	$1\frac{3}{4}$	4.00	4.25	4.85	6.10	7.70	10.75	10.75	14.50	19.70	22.75	.....
	2	4.25	4.85	5.20	6.50	8.30	11.50	11.50	15.50	21.00	25.00	34.00
	$2\frac{1}{4}$	4.70	5.35	5.55	7.15	8.90	12.60	12.60	16.50	22.40	27.25	36.75
	$2\frac{1}{2}$	5.25	5.80	6.00	7.50	9.50	13.60	13.60	17.50	23.70	29.50	39.50
	$2\frac{3}{4}$	5.75	6.30	6.65	7.90	10.10	14.40	14.40	19.00	25.00	31.75	42.25
	3	6.25	6.80	7.20	8.40	10.70	15.20	15.20	20.60	26.40	34.00	45.00
	$3\frac{1}{4}$	.....	.....	.....	9.15	11.50	16.00	16.00	22.10	28.20	36.25	47.75
	$3\frac{1}{2}$	.....	.....	.....	9.75	12.30	17.30	17.30	23.70	30.00	38.50	50.50
	$3\frac{3}{4}$	.....	.....	.....	10.50	13.10	18.60	18.60	25.30	31.80	40.75	53.25
	4	.....	.....	.....	11.10	13.60	19.90	19.90	26.90	33.60	43.00	56.00
Add for Each $\frac{1}{4}$ In.	.40	.50	.60	.70	.80	1.30	1.30	1.60	1.80	2.25	2.75	3.50



## IRON SET SCREWS

B2513

Case Hardened, Oval or Cup Points

## PRICE PER HUNDRED

Diameter Screw Inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Length under Head to Extreme Point.	$\frac{1}{8}$	1.80	2.00	2.35	.....	.....	.....	.....	.....	.....
	$\frac{1}{4}$	1.90	2.10	2.45	2.80	3.30	.....	.....	.....	.....
	$\frac{3}{8}$	2.00	2.20	2.50	2.90	3.40	5.00	5.00	.....	.....
	$\frac{1}{2}$	2.10	2.30	2.60	3.00	3.60	5.50	5.50	.....	.....
	$1\frac{1}{4}$	2.15	2.35	2.65	3.10	3.80	5.75	5.75	10.00	.....
	$1\frac{1}{2}$	2.30	2.50	2.85	3.50	4.30	6.50	6.50	11.00	15.50
	$1\frac{3}{4}$	2.50	2.70	3.10	4.00	4.80	7.25	7.25	12.00	16.20
	2	2.75	3.00	3.50	4.50	5.40	8.00	8.00	12.80	17.70
	$2\frac{1}{4}$	3.25	3.50	4.00	5.15	6.00	8.80	8.80	13.60	19.20
	$2\frac{1}{2}$	3.75	4.00	4.50	5.75	6.75	9.60	9.60	14.50	20.70
	$2\frac{3}{4}$	4.25	4.50	5.00	6.35	7.50	10.40	10.40	15.40	22.20
	3	4.75	5.00	5.50	6.75	8.25	11.20	11.20	16.30	23.70
	$3\frac{1}{4}$	5.25	5.50	6.00	7.20	9.00	12.00	12.00	17.30	25.20
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Threads to Inch	20	18	16	14	12	12	11	10	9	8

Larger sizes quoted on application.



### DIAMOND EXPANSION BOLTS COMPLETE — B2514

Malleable shields with square head screws.

Price List per 100.

Length Inches.	DIAMETER SCREW IN INCHES.								
	¼	⅝	¾	½	⅝	¾	⅞	1	1¼
2	9.00	9.90	.....	.....	.....	.....	.....	.....	.....
2½	9.05	10.00	12.00	18.80	23.00	31.00	.....	.....	.....
3	9.10	10.10	12.50	19.40	24.00	32.00	.....	.....	.....
4	9.20	10.20	13.00	20.00	25.00	33.00	.....	.....	.....
5	.....	10.30	13.90	20.60	26.00	34.00	.....	.....	.....
6	.....	10.40	14.10	20.90	27.00	35.00	45.00	56.00	.....
7	.....	10.50	14.30	21.20	28.00	36.00	46.00	57.00	.....
8	.....	.....	14.50	21.50	29.00	37.00	47.00	58.00	.....
9	.....	.....	.....	21.80	30.00	38.00	48.00	59.00	.....
10	.....	.....	.....	.....	31.00	39.00	49.00	60.00	76.00
Add for each additional inch length of bolt:				1.00	1.00	1.00	1.00	1.00	1.50

Ten per cent extra for bolts with hexagon heads.

### MALLEABLE SHIELDS (ONLY) — B2515

For diameter screw, Inches.	¼	⅝	¾	½	⅝	¾	⅞	1	1¼
Per 100.....	8.50	9.00	11.50	18.00	22.00	30.00	41.50	51.00	64.00

### SMALL ONE-PART COMPOSITION EXPANSION SHIELDS

These shields are without screws. Made to fit any thread, so that any kind or make of wood screws can be used. B2516

No.	For Screw Number.	Lgth sh'd	Outsi diam	Per 100	No.	For Screw Number.	Lgth Sh'd	Outsi diam	Per 100
⅛ x ⅝	5 or 6	⅝ in.	¼	2.10	¼ x 1	12, 13 or 14	1 in.	⅞	2.70
⅜ x ¾	9, 10 or 11	¾	⅝	2.40	¼ x 1½	12, 13 or 14	1½	⅞	2.70
¼ x ½	12, 13 or 14	½	¾	2.70	⅝ x ¾	15, 16, 17 or 18	¾	⅞	3.00
¼ x ¾	12, 13 or 14	¾	¾	2.70	⅝ x 1	15, 16, 17 or 18	1	⅞	3.00

### BOILER STAY BOLTS

12 Threads per Inch



B2517

### BOILER PATCH BOLTS

12 Threads to the Inch



B2518

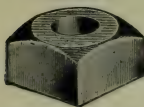
Diameter of Bolts.....inches	½	⅝	¾	⅞	1	1½	1¼
Stay Bolts.....per foot	.36	.40	.60	.80	1.00	1.00	1.30

These bolts are made of stay bolt iron. Bolts shorter than 1 foot are figured as 1 foot each. Heads of bolts are 1 inch long and are figured in length of bolt.

Patch Bolts	Diameter	Length, largest Diam. of Bevel to Point .....inches	¾	1	1¼
	Per 100				
1	½ inch	.....	3.75	4.25	.....
	⅝	.....	4.25	4.80	5.50
	¾	.....	.....	6.50	7.25
	⅞	.....	.....	9.50	10.25
	1	.....	.....	13.50	14.75



SQUARE

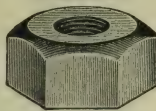


B2519

HOT PRESSED  
SQUARE AND  
HEXAGON NUTS

U. S. Standard List Jan. 1, 1906.

HEXAGON



B2520

U. S. STANDARD LIST JANUARY 1, 1906.

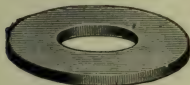
Width, Inches	Thickness Inches	Hole, Inches	Size of Bolt Inches	SQUARE		HEXAGON		Width, Inches	Thickness Inches	Hole, Inches	Size of Bolt Inches	SQUARE		HEXAGON	
				200 Pound Kegs Cents Per pound	200-Pound Kegs Cents Per pound	200 - Pound Kegs Cents Per pound	200-Pound Kegs Cents Per pound								
Blank	Tapped	Blank	Tapped	Blank	Tapped	Blank	Tapped								
1/2	1/4	3/16	1/4	13.	15.	20.	22.5	1 5/8	1	3/2	1	8.4	8.8	9.9	10.5
13/32	5/16	1/2	5/16	12.	13.5	18.	20.	1 1/2	1 1/8	1 1/8	1 1/8	8.4	8.8	9.9	10.5
11/32	3/8	5/8	3/8	10.5	11.6	14.	15.6	2	1 1/4	1 1/4	1 1/4	8.4	8.8	9.9	10.5
11/32	7/16	3/4	7/16	10.	10.9	13.	14.3	2 1/8	1 3/8	1 3/8	1 3/8	8.5	9.	10.	10.7
11/32	1/2	7/8	1/2	9.	9.7	11.2	12.2	2 1/2	1 1/2	1 1/2	1 1/2	8.8	9.4	10.3	11.1
1 1/32	5/8	1	5/8	9.	9.6	11.2	12.1	2 3/8	1 5/8	1 5/8	1 5/8	9.	9.7	10.5	11.4
1 1/8	3/4	1 1/8	3/4	8.7	9.2	10.5	11.2	2 1/2	1 3/4	1 3/4	1 3/4	9.3	10.	10.8	11.7
1 1/8	7/8	1 1/4	7/8	8.5	8.9	10.	10.6	2 3/4	1 7/8	1 7/8	1 7/8	9.5	10.3	11.	12.
1 1/8	1	1 1/2	1	8.4	8.8	9.9	10.5	3	2	2	2	9.7	10.6	11.2	12.3

Less than keg lots (200 pounds) of a size, at special price.

SEMIFINISHED TAPPED HEXAGON NUTS—B2521

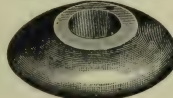
For Bolt ..inches	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
Width..... "	1/2	13/32	11/16	33/64	7/8	1 1/8	1 1/4	1 5/8	1 3/4	1 7/8	2
Thickness .. "	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
No. of Threads to inch ..	20	18	16	14	12	11	10	9	8	7	7
Each ..	.02	.02 1/2	.03 1/4	.03 3/4	.04 1/2	.05 1/4	.06 1/4	.08 1/2	.12	.16 1/2	.30

CUT WASHER



B2522

CAST WASHER



B2523

Price List  
CUT WASHERS

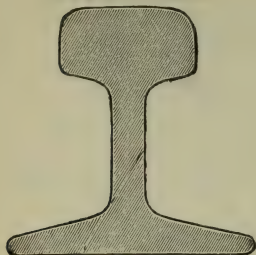
Diam. Inches	Hole Inches	Thick. Wire Gauge No.	Size Bolt Inches	Per 100 lbs. in 200 lb. Kegs	Diam. Inches	Hole Inches	Thick. Wire Gauge No.	Size Bolt Inches	Per 100 lbs. in 200 lb. Kegs
3/8	1/4	18	3/16	14.00	2 1/2	1 1/8	9	1	8.80
1/2	5/16	16	1/4	12.20	2 1/4	1 1/4	9	1 1/8	8.80
5/8	3/8	16	5/16	11.40	3	1 3/8	9	1 1/4	9.00
1	7/16	14	3/8	10.50	3 1/4	1 1/2	8	1 3/8	9.00
1 1/4	1/2	14	7/16	9.70	3 1/2	1 5/8	8	1 3/4	9.20
1 1/8	5/8	12	1/2	9.20	3 3/4	1 3/4	8	1 7/8	9.20
1 1/2	3/4	12	5/8	9.10	4	1 7/8	8	1 3/4	9.50
1 3/4	7/8	10	3/4	9.00	4 1/4	2	8	1 7/8	9.50
2	1	10	7/8	8.80	4 1/2	2 1/8	8	2	9.50
2 1/4	1 1/8	9	1	8.80	....	....	....	....	....

CAST WASHERS—B2523

{ For 1/2-inch Bolt.....per lb. ....  
" 5/8- " and larger Bolt... " ....



## STEEL RAIL



B2524

Quoted on application.  
State weight to the yard wanted.

## REGULAR TRACK SPIKE



B2525

## BOAT SPIKE



B2526

## REGULAR TRACK SPIKES

For Rails, lbs.	8 and 10	8 and 10	10 and 12	12 and 16	16 and 20	20 and 24
Size.....	$\frac{1}{8} \times 2\frac{1}{2}$	$\frac{3}{8} \times 2\frac{1}{2}$	$\frac{3}{8} \times 3\frac{1}{2}$	$\frac{3}{8} \times 4$	$\frac{1}{2} \times 3\frac{1}{2}$	$\frac{1}{2} \times 4\frac{1}{2}$

## STANDARD LIST

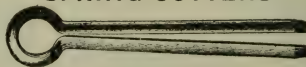
1 1/2 x 4 1/2, 5 and 5 1/2 inch.....	Per 100 lb.....	Base
1 1/2 x 3 1/2, 4, 4 1/2 and 5 inch.....	Extra	.05
1 1/2 x 3 1/2, 4 and 4 1/2 inch.....		.10
3/4 x 3, 3 1/2, 4 and 4 1/2 inch.....		.20
3/4 x 2 1/2 inch.....		.30
3/4 x 2 1/2, 3 and 3 1/2 inch.....		.45
200 lbs. in a keg.....		

## BOAT SPIKES

Add per 100 lbs. to Base Price.	$\frac{1}{4} \times 3$ to $3\frac{1}{2}$ in. .95	$\frac{1}{4} \times 4$ to 8 in. .65	$\frac{5}{16} \times 4$ to 8 in. .35	$\frac{3}{8} \times 4$ to 12 in. .20
	$\frac{7}{16} \times 6$ to 12 in. .10	$\frac{1}{2} \times 6$ to 16 in. .05	$\frac{5}{8} \times 8$ to 16 in. .05	$\frac{3}{4} \times 12$ to 24 in. .05

$\frac{3}{8}$  and  $\frac{5}{16}$  in., shorter than 4 in., add extra  $\frac{1}{4}$ c per lb.

## SPRING COTTERS



B2527

## PRICE PER THOUSAND

WIRE GAUGE		13	12	11	10	9	8	7	6	5	4	1	.....	.....	.....
Diam. in.		$\frac{3}{32}$	$\frac{7}{64}$	$\frac{1}{8}$	$\frac{9}{64}$	$\frac{5}{32}$	$\frac{11}{64}$	$\frac{3}{16}$	$\frac{13}{64}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$
Length, Inches	$\frac{1}{8}$	3.50	4.00	5.00	6.00	7.00	8.00	.....	.....	.....	.....	.....	.....	.....	.....
	$\frac{3}{4}$	4.15	4.75	5.85	7.00	8.15	9.30	11.10	12.00	.....	.....	.....	.....	.....	.....
	1	4.80	5.50	6.70	8.00	9.30	10.60	12.80	14.00	18.00	20.00	32.50	.....	.....	.....
	1 $\frac{1}{4}$	5.45	6.25	7.55	9.00	10.45	11.90	14.50	16.00	20.80	23.50	37.50	.....	.....	.....
	1 $\frac{1}{2}$	6.10	7.00	8.40	10.00	11.60	13.20	16.20	18.00	23.60	27.00	42.50	72.00	.....	.....
	1 $\frac{3}{4}$	6.75	7.75	9.25	11.00	12.75	14.50	17.90	20.00	26.40	50.50	47.50	79.20	108.00	.....
	2	7.40	8.50	10.10	12.00	13.90	15.80	19.60	22.00	29.20	34.00	52.50	86.40	119.50	148.50
	2 $\frac{1}{4}$	.....	.....	10.95	13.00	15.05	17.10	21.50	24.00	32.00	37.50	57.50	93.60	151.00	165.50
	2 $\frac{1}{2}$	.....	.....	11.80	14.00	16.20	18.40	23.00	26.00	34.80	41.00	62.50	100.80	142.50	178.50
	2 $\frac{3}{4}$	.....	.....	.....	.....	.....	.....	24.70	28.00	37.60	44.50	67.50	108.00	154.00	193.50
3	.....	.....	.....	.....	.....	.....	26.40	30.00	40.40	48.00	72.50	115.20	165.50	208.50	

# WEIGHTS OF ROUND AND SQUARE IRON AND STEEL

Per Lineal Foot  
Estimated.

Size Inches	ROUND		SQUARE		Size Inches	ROUND		SQUARE	
	Iron Pounds	Steel Pounds	Iron Pounds	Steel Pounds		Iron Pounds	Steel Pounds	Iron Pounds	Steel Pounds
$\frac{1}{4}$	.1653	.167	.2105	.212	$2\frac{1}{4}$	15.39	13.52	17.05	17.22
$\frac{5}{16}$	.2583	.261	.3290	.333	$2\frac{3}{8}$	14.92	15.07	19.00	19.18
$\frac{3}{8}$	.3720	.375	.4736	.478	$2\frac{1}{2}$	16.55	16.69	21.05	21.25
$\frac{7}{16}$	.5063	.511	.6446	.651	$2\frac{5}{8}$	18.23	18.40	23.21	23.43
$\frac{1}{2}$	.6613	.667	.8420	.850	$2\frac{3}{4}$	20.01	20.20	25.47	25.00
$\frac{9}{16}$	.8370	.845	1.066	1.076	$2\frac{7}{8}$	21.64	22.07	27.55	28.10
$\frac{5}{8}$	1.033	1.043	1.316	1.328	3	23.81	24.03	30.31	30.60
$\frac{11}{16}$	1.237	1.262	1.576	1.608	$3\frac{1}{8}$	25.57	26.08	32.55	33.20
$\frac{3}{4}$	1.488	1.502	1.895	1.913	$3\frac{1}{4}$	27.94	28.20	35.57	35.92
$\frac{13}{16}$	1.728	1.773	2.201	2.245	$3\frac{3}{8}$	29.82	30.42	37.97	38.73
$\frac{7}{8}$	2.025	2.044	2.579	2.603	$3\frac{1}{2}$	32.41	32.71	41.26	41.65
$1\frac{1}{8}$	2.301	2.347	2.93	2.989	$3\frac{5}{8}$	34.4	35.09	43.8	44.68
1	2.645	2.670	3.368	3.400	$3\frac{3}{4}$	37.20	37.56	47.37	47.82
$1\frac{1}{16}$	3.348	3.379	4.263	4.303	4	42.53	42.73	53.89	54.40
$1\frac{1}{4}$	4.133	4.173	5.263	5.312	$4\frac{1}{4}$	47.29	48.24	60.21	61.41
$1\frac{3}{8}$	5.001	5.049	6.368	6.423	$4\frac{1}{2}$	53.57	54.07	.....	68.85
$1\frac{1}{2}$	5.952	6.008	7.578	7.650	$4\frac{3}{4}$	59.07	60.25	.....	76.71
$1\frac{5}{8}$	6.985	7.051	8.893	8.978	5	66.13	66.76	.....	85.00
$1\frac{3}{4}$	8.101	8.178	10.31	10.41	$5\frac{1}{4}$	72.16	73.60	.....	93.72
$1\frac{7}{8}$	9.300	9.388	11.84	11.95	$5\frac{1}{2}$	80.02	80.77	.....	102.8
2	10.58	10.68	13.47	15.60	$5\frac{3}{4}$	86.56	88.29	.....	112.4
$2\frac{1}{8}$	11.95	12.06	15.21	15.35	6	95.23	96.14	.....	122.4

## WEIGHT OF FLAT STEEL BARS

Lineal Foot  
Estimated.

(Iron weighs approximately 1% less than Steel.)

Wide	THICKNESS																
	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$	1 in	
1 in.	.2125	.425	.638	.85	1.06	1.28	1.49	1.70	1.92	2.12	2.34	2.55	2.76	2.98	3.19	3.40	
1 $\frac{1}{4}$ in.	.265	.53	.797	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.19	3.45	3.72	3.99	4.25	
1 $\frac{1}{2}$ in.	.32	.64	.957	1.20	1.59	1.92	2.23	2.55	2.87	3.19	3.51	3.83	4.14	4.47	4.78	5.10	
1 $\frac{3}{4}$ in.	.3725	.745	1.11	1.49	1.86	2.23	2.60	2.98	3.35	3.72	4.09	4.47	4.84	5.20	5.58	5.95	
2 in.	.425	.85	1.28	1.70	2.12	2.55	2.98	3.40	3.83	4.25	4.67	5.10	5.53	5.95	6.38	6.80	
2 $\frac{1}{4}$ in.	.4775	.955	1.44	1.91	2.39	2.87	3.35	3.83	4.30	4.78	5.26	5.75	6.21	6.69	7.18	7.65	
2 $\frac{1}{2}$ in.	.53	1.06	1.59	2.12	2.65	3.19	3.72	4.25	4.78	5.31	5.84	6.38	6.90	7.44	7.97	8.50	
2 $\frac{3}{4}$ in.	.585	1.17	1.75	2.34	2.92	3.51	4.09	4.67	5.26	5.84	6.43	7.02	7.60	8.18	8.77	9.35	
3 in.	.6375	1.275	1.91	2.55	3.19	3.83	4.46	5.10	5.74	6.38	7.02	7.65	8.29	8.93	9.57	10.20	
3 $\frac{1}{4}$ in.	.69	1.38	2.07	2.76	3.45	4.15	4.83	5.53	6.22	6.91	7.60	8.29	8.93	9.67	10.36	11.05	
3 $\frac{1}{2}$ in.	.745	1.49	2.23	2.98	3.72	4.47	5.20	5.95	6.70	7.44	8.18	8.93	9.67	10.41	11.16	11.90	
3 $\frac{3}{4}$ in.	.7975	1.595	2.39	3.19	3.99	4.78	5.58	6.38	7.17	7.97	8.76	9.57	10.56	11.16	11.95	12.75	
4 in.	.85	1.70	2.55	3.40	4.25	5.10	5.95	6.80	7.65	8.50	9.35	10.20	11.05	11.90	12.75	13.60	
4 $\frac{1}{4}$ in.	.9025	1.805	2.71	3.61	4.52	5.42	6.32	7.22	8.15	9.03	9.93	10.84	11.74	12.65	13.55	14.45	
4 $\frac{1}{2}$ in.	.9575	1.915	2.87	3.83	4.78	5.74	6.70	7.65	8.61	9.57	10.52	11.48	12.43	13.38	14.34	15.30	
4 $\frac{3}{4}$ in.	1.01	2.02	3.03	4.04	5.05	6.06	7.07	8.08	9.09	10.10	11.11	12.12	13.12	14.13	15.14	16.15	
5 in.	1.0625	2.125	3.19	4.25	5.31	6.38	7.44	8.50	9.57	10.6	11.69	12.75	13.81	14.87	15.94	17.00	
5 $\frac{1}{4}$ in.	1.115	2.23	3.35	4.46	5.5	6.69	7.81	8.93	10.04	11.16	12.27	13.39	14.50	15.62	16.74	17.85	
5 $\frac{1}{2}$ in.	1.1675	2.335	3.51	4.67	5.84	7.02	8.18	9.35	10.52	11.69	12.85	14.03	15.19	16.36	17.53	18.70	
5 $\frac{3}{4}$ in.	1.2225	2.445	3.67	4.89	6.11	7.34	8.56	9.77	11.00	12.22	13.44	14.67	15.88	17.10	18.33	19.55	
6 in.	1.275	2.55	3.83	5.10	6.38	7.65	8.93	10.20	11.48	12.75	14.03	15.30	16.58	17.85	19.13	20.40	

## STANDARD IRON CLASSIFICATION

## FLATS

1½ to 4x ¾ to 1 in.....	Base.	8¼ to 10 x 1½ to 1½ in.....	.90 extra
4¼ to 6x ¾ to 1 ".....	.10 extra	8¼ to 10 x 1½ to 2 ".....	1.00 "
4¼ to 6x 1½ to 1½ ".....	.40 "	2 to 4 x 2½ to 3 ".....	.60 "
6¼ to 8x 1½ to 1½ ".....	.60 "	4¼ to 6 x 2½ to 3 ".....	.80 "
6¼ to 8x ¾ to 1 ".....	.60 "	6¼ to 8 x 2½ to 3 ".....	1.00 "
8¼ to 10x ¾ to 1 ".....	.80 "	1½ to 1¾ x ¾ to 1 ".....	.10 "
1½ to 4x 1½ to 1½ ".....	.30 "	1 to 1½ x ¾ to ¾ ".....	.20 "
2 to 4x 1½ to 2 ".....	.50 "	¾ to 1½ x ¾ to ¾ ".....	.40 "
4¼ to 6x 1½ to 2 ".....	.60 "	¾ to 1½ x ¾ to ¾ ".....	.50 "
6¼ to 8x 1½ to 2 ".....	.80 "	½ to 1½ x ¾ to ½ ".....	.90 "

## ROUNDS AND SQUARES

1 to 1½ in.....	Base.
2 to 2½ ".....	.20 extra
3 to 3½ ".....	.50 "
3½ to 4 ".....	.80 "
4½ to 4½ ".....	1.00 "
4½ to 5 ".....	1.30 "
5½ to 6 ".....	1.80 "
6½ to 6½ ".....	2.20 "
6½ to 7½ ".....	2.50 "
¾ to 1 ".....	.10 "
¾ to 1½ ".....	.20 "
¾ to 1½ ".....	.30 "
¾ to 1½ ".....	.40 "
¾ to 1½ ".....	.50 "
¾ to 1½ ".....	.70 "
¾ to 1½ ".....	.90 "
¾ in.....	1.40 "
¾ in.....	2.50 "

## OVAL IRON

¾ to 1½ in....	.40 extra
¾ to 1½ ".....	.50 "
¾ to 1½ ".....	.60 "
¾ to 1½ ".....	.80 "
¾ to 1½ ".....	1.10 "
¾ to 1½ in.1.00 "	
¾ to 1½ ".....	1.20 "

## HEAVY IRON

## BAND Extra

8¼ to 10 x ¼ to ¼ in. .70	
7 to 8 x ¼ to ¼ " .70	
6¼ to 6¾ x ¼ to ¼ " .50	
4¼ to 6 x ¼ to ¼ " .30	
1½ to 4 x ¼ to ¼ " .20	
1 to 1¾ x ¼ to ¼ " .30	
¾ to 1½ x ¼ to ¼ " .50	
¾ to 1½ x ¼ to ¼ " .80	
½ to 1½ x ¼ to ¼ " 1.00	
¾ to 1½ x ¼ to ¼ " 1.50	

## HALF OVAL AND HALF ROUND

2¼ to 3 in....	.60 extra
¾ to 2 ".....	.50 "
¾ to 1½ ".....	.70 "
¾ to 1½ ".....	.90 "
¾ to 1½ ".....	1.20 "
¾ to 1½ ".....	2.50 "
¾ in.....	3.50 "
¾ in.....	4.50 "

Half ovals less than ¼ their width in thickness, extra price.

Extra for cutting bar iron to specified length.

## LIGHT BANDS

7 to 8 x No. 9 to ¾.....	.90 extra	1½ to ¾ x No. 9 to ¾.....	.60 extra
7 to 8 x Nos. 10, 11, 12.....	1.00 "	1½ to ¾ x Nos. 10, 11, 12.....	.70 "
6¼ to 6¾ x No. 9 to ¾.....	.70 "	1½ to ¾ x No. 9 to ¾.....	.80 "
6¼ to 6¾ x Nos. 10, 11, 12.....	.80 "	1½ to ¾ x Nos. 10, 11, 12.....	.90 "
4¼ to 6 x No. 9 to ¾.....	.50 "	1½ to ¾ x No. 9 to ¾.....	1.00 "
4¼ to 6 x Nos. 10, 11, 12.....	.60 "	1½ to ¾ x Nos. 10, 11, 12.....	1.10 "
1½ to 4 x No. 9 to ¾.....	.40 "	1½ to ¾ x No. 9 to ¾.....	1.30 "
1½ to 4 x Nos. 10, 11, 12.....	.50 "	1½ to ¾ x Nos. 10, 11, 12.....	1.40 "
1 to 1½ x No. 9 to ¾.....	.50 "	¾ x No. 9 to ¾.....	1.50 "
1 to 1½ x Nos. 10, 11, 12.....	.60 "	¾ x Nos. 10, 11, 12.....	1.60 "

## NORWAY AND SWEDISH IRON

## ROUNDS AND SQUARES—Extras per 100 Pounds

1 to 1½ inch.....	Base	1½ to ½ inch.....	.30
2 " 2½ ".....	.10	¾ inch.....	.40
2½ " 3¼ ".....	.20	¾ ".....	.60
3½ " 4 ".....	.50	¾ ".....	1.00
¾ " ¾ ".....	.10	¾ ".....	1.50
¾ " ¾ ".....	.20		

## FLATS

1½ to 4x ¾ to 1 inch.....	Base	1½ to 6 x ¼ and ¼ inch.....	.20
4¼ " 6x ¾ " 1 ".....	.10	1 " 1½ x ¼ " ¼ ".....	.30
1½ " 6x 1½ " 1½ ".....	.20	¾ and ¾ x ¼ " ¼ ".....	.50
2½ " 6x 2 inch.....	.50	½ " ¾ x ¼ " ¼ ".....	1.00
1½ and 1¾ x ¾ to 1 inch.....	.10	1 to 2 x ¾ inch.....	.50
1 " 1½ x ¾ to ¾ ".....	.20	¾ and ¾ x ¾ ".....	.80
½, ¾, ¾ and ¾ x ¾ to ¾ inch.....	.40	½ " ¾ x ¾ ".....	1.20

## NAIL RODS

¾ x ¾ inches, 25 and 50 pounds bundles.....	1.50
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# STANDARD STEEL CLASSIFICATION

## ROUNDS AND SQUARES—Extras per 100 Pounds.

$\frac{3}{8}$ to 3 inches ....	Base	$\frac{7}{8}$ inches .....	1.00	$5\frac{1}{8}$ to $5\frac{1}{2}$ inches..	.50
$\frac{3}{8}$ " $\frac{11}{16}$ " .....	.10	$\frac{3}{16}$ to $3\frac{1}{2}$ inches..	2.00	$5\frac{3}{8}$ " 6 " .....	.75
$\frac{1}{2}$ " $\frac{1}{16}$ " .....	.20	$3\frac{1}{16}$ " 4 " .....	.15	$6\frac{1}{8}$ " $6\frac{1}{2}$ " .....	1.00
1 inches .....	.40	$3\frac{1}{8}$ " $4\frac{1}{2}$ " .....	.25	$6\frac{3}{8}$ " $7\frac{1}{4}$ " .....	1.25
$\frac{1}{2}$ " $\frac{3}{8}$ " .....	.50	$4\frac{1}{16}$ " 5 " .....	.30		
$\frac{5}{16}$ " $\frac{1}{16}$ " .....	.60		.40		
$\frac{1}{4}$ to $\frac{3}{4}$ inches....	.70				

## FLAT BARS AND HEAVY BANDS

1 to 6 x $\frac{3}{8}$ to 1 inches.....	Base	$\frac{7}{16}$ x $\frac{3}{8}$ inches .....	1.00
1 " 6 x $\frac{1}{4}$ and $\frac{5}{16}$ " .....	.20	$\frac{7}{16}$ x $\frac{1}{4}$ and $\frac{5}{16}$ inches.....	1.20
$\frac{11}{16}$ " $\frac{11}{16}$ x $\frac{3}{4}$ to $\frac{3}{2}$ " .....	.40	$\frac{3}{8}$ x $\frac{1}{4}$ " .....	1.50
$\frac{11}{16}$ " $\frac{11}{16}$ x $\frac{1}{4}$ and $\frac{5}{16}$ " .....	.50	$1\frac{1}{8}$ to 6 x $1\frac{1}{16}$ to $1\frac{3}{16}$ inches .....	.10
$\frac{1}{16}$ and $\frac{3}{8}$ x $\frac{3}{4}$ to $\frac{1}{2}$ " .....	.50	$1\frac{1}{8}$ " 6 x $1\frac{1}{4}$ " $1\frac{1}{2}$ " .....	.20
$\frac{1}{16}$ " $\frac{3}{8}$ x $\frac{1}{4}$ and $\frac{5}{16}$ inches ....	.70	$1\frac{1}{4}$ " 6 x 1 " $2\frac{1}{4}$ " .....	.30
$1\frac{1}{2}$ x $\frac{3}{8}$ and $\frac{1}{16}$ inches.....	.90	$3\frac{1}{8}$ " 6 x 3 " 4 " .....	.40
$\frac{1}{2}$ x $\frac{1}{4}$ " $\frac{3}{16}$ " .....	1.10		

## LIGHT BARS AND BANDS

$1\frac{1}{2}$ to 6 in. x Nos. 7, 8, 9 and $\frac{3}{16}$ in.	.40	$\frac{9}{16}$ and $\frac{5}{8}$ in. x Nos. 7, 8, 9 and $\frac{3}{16}$ in.	1.20
1 " 6 " x " 10, 11, 12 " $\frac{1}{8}$ in.	.60	$\frac{9}{16}$ " " x " 10, 11, 12 " $\frac{1}{8}$ in.	1.30
$1\frac{1}{2}$ to $1\frac{1}{16}$ " x " 7, 8, 9 " $\frac{1}{16}$ in.	.50	$1\frac{1}{2}$ in. x Nos. 7, 8, 9 and $\frac{1}{16}$ in.	1.30
1 " $1\frac{1}{16}$ " x " 10, 11, 12 " $\frac{1}{16}$ in.	.70	$\frac{1}{2}$ " x " 10, 11, 12 " $\frac{1}{16}$ in.	1.50
$\frac{11}{16}$ " " x " 7, 8, 9 " $\frac{1}{16}$ in.	.70	$\frac{7}{16}$ " x " 7, 8, 9 " $\frac{1}{16}$ in.	1.80
$\frac{11}{16}$ " " x " 10, 11, 12 " $\frac{1}{16}$ in.	.80	$\frac{7}{16}$ " x " 10, 11, 12 " $\frac{1}{16}$ in.	2.10
$\frac{11}{16}$ " " x " 7, 8, 9 " $\frac{1}{16}$ in.	1.00	$\frac{3}{8}$ " x " 7, 8, 9 " $\frac{1}{16}$ in.	1.90
$\frac{11}{16}$ " $\frac{3}{4}$ " x " 10, 11, 12 " $\frac{1}{16}$ in.	1.20	$\frac{3}{8}$ " x " 10, 11, 12 " $\frac{1}{16}$ in.	2.40

## OVALS

$\frac{3}{8}$ to $1\frac{1}{4}$ inches .....	.40
$\frac{3}{4}$ " $\frac{11}{16}$ " .....	.50
$\frac{3}{8}$ " $\frac{11}{16}$ " .....	.60
$\frac{1}{2}$ " $\frac{1}{16}$ " .....	.80
$\frac{1}{2}$ " $\frac{1}{16}$ " .....	1.00

## $\frac{1}{2}$ OVALS AND $\frac{1}{2}$ ROUNDS

$\frac{7}{8}$ to 2 inches x $\frac{7}{32}$ in. and thicker	.50
$\frac{3}{4}$ " $\frac{11}{16}$ " " x $\frac{3}{16}$ " " " "	.80
$\frac{3}{8}$ " $\frac{11}{16}$ " " x $\frac{3}{16}$ " " " "	1.00
$\frac{1}{2}$ " $\frac{1}{16}$ " " x $\frac{3}{16}$ " " " "	1.30
$\frac{3}{8}$ " " " x $\frac{3}{16}$ " " " "	2.50

For intermediate sizes, the next highest extra will be charged.

Horse Shoe Steel,  $\frac{3}{8}$  to  $1\frac{1}{8}$  inch by  $\frac{1}{16}$  to  $\frac{7}{8}$  inch. \$1.00 per 100 lbs. extra.

Angles, Tees and Channels quoted on application.

# TOOL STEEL CLASSIFICATION

Extras per Pound

## ROUND, SQUARE AND OCTAGON

$\frac{5}{8}$ to 2 inch ....	Base	$6\frac{1}{8}$ to 7 inch ....	.03	$\frac{1}{4}$ inen .....	.03
$2\frac{1}{8}$ " 3 " .....	.01	$7\frac{1}{8}$ " 8 " .....	.03 $\frac{1}{2}$	$\frac{1}{16}$ " .....	.05
$3\frac{1}{8}$ " 4 " .....	.01 $\frac{1}{2}$	$\frac{1}{2}$ " " .....	.00 $\frac{1}{2}$	$\frac{3}{32}$ " .....	.10
$4\frac{1}{8}$ " 5 " .....	.02	$\frac{7}{16}$ " $\frac{3}{8}$ " .....	.01	$\frac{1}{8}$ " .....	.18
$5\frac{1}{8}$ " 6 " .....	.02 $\frac{1}{2}$	$\frac{1}{16}$ " " .....	.02		

## FLAT

$\frac{5}{8}$  to 2 inch thick x  $\frac{9}{16}$  to 2 inch wide..... Base

$\frac{1}{8}$ x $\frac{3}{16}$ inch ....	.20	$\frac{3}{8}$ x $7\frac{1}{8}$ to 8 in.	.02	$\frac{5}{8}$ to 2 x $\frac{5}{8}$ to 2 in.	Base
$\frac{1}{8}$ x $\frac{1}{4}$ " .....	.15	$\frac{1}{4}$ x $\frac{1}{16}$ " $\frac{3}{8}$ " .....	.02	$\frac{3}{8}$ " 2 x $2\frac{1}{2}$ to 7	.01
$\frac{1}{8}$ x $\frac{1}{8}$ " .....	.08	$\frac{1}{4}$ x $\frac{1}{16}$ " $\frac{3}{8}$ " .....	.01 $\frac{1}{2}$	$\frac{1}{8}$ " $1\frac{1}{4}$ x $7\frac{1}{8}$ " 8	.01
$\frac{1}{8}$ x $\frac{1}{16}$ " .....	.04	$\frac{1}{4}$ x $\frac{1}{16}$ " 2 " .....	.01 $\frac{1}{2}$	$\frac{1}{8}$ " 2 x $7\frac{1}{8}$ " 8	.01 $\frac{1}{2}$
$\frac{1}{8}$ x $\frac{1}{16}$ to $\frac{1}{2}$ in.	.03	$\frac{1}{4}$ x 2 " 7 " .....	.01	$2\frac{1}{8}$ " 3 x $2\frac{1}{8}$ " 5	.01
$\frac{1}{8}$ x $\frac{1}{16}$ " 7 " .....	.02	$\frac{1}{4}$ x $7\frac{1}{8}$ " 8 " .....	.02	$2\frac{1}{8}$ " 3 x $5\frac{1}{8}$ " 8	.01 $\frac{1}{2}$
$\frac{1}{8}$ x $7\frac{1}{8}$ " 8 " .....	.03	$\frac{1}{8}$ x $\frac{3}{4}$ " $\frac{3}{8}$ " .....	.01 $\frac{1}{2}$	$3\frac{1}{8}$ " 4 x $3\frac{1}{8}$ " 6	.01 $\frac{1}{2}$
$\frac{1}{8}$ x $\frac{1}{4}$ inch.....	.05	$\frac{1}{8}$ x $\frac{11}{16}$ " 8 " .....	.01	$3\frac{1}{8}$ " 4 x $6\frac{1}{8}$ " 8	.02
$\frac{1}{8}$ x $\frac{1}{16}$ " .....	.04	$\frac{3}{8}$ x $\frac{1}{16}$ " 8 " .....	.01	$4\frac{1}{8}$ " 5 x $4\frac{1}{8}$ " 7	.02
$\frac{1}{8}$ x $\frac{3}{8}$ " .....	.03	$\frac{1}{2}$ x $\frac{1}{16}$ " 8 " .....	.01	$4\frac{1}{8}$ " 5 x $7\frac{1}{8}$ " 8	.02 $\frac{1}{2}$
$\frac{1}{8}$ x $\frac{1}{16}$ to $\frac{3}{8}$ in.	.02	$\frac{1}{2}$ x " 8 " .....	.01	$5\frac{1}{8}$ " 6 x $5\frac{1}{8}$ " 8	.02 $\frac{1}{2}$
$\frac{1}{8}$ x $\frac{11}{16}$ " 2 " .....	.01 $\frac{1}{2}$	$\frac{1}{16}$ x 2 " 8 " .....	.01	$6\frac{1}{8}$ " 7 x $6\frac{1}{8}$ " 7	.03
$\frac{1}{8}$ x $2\frac{1}{8}$ " 7 " .....	.01			$6\frac{1}{8}$ " 8 x $7\frac{1}{8}$ " 8	.03 $\frac{1}{2}$



**CABLE CHAIN**



B2529

Can also be furnished Twist Links.

Size Iron .....inch	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Average Weight per Foot of Straight Link Chain ..... }	.5	.75	1.1	1.55	2	2.25	3.25	4.2	5.9	8	10
lbs.											

Prices quoted on application.

**BRIGHT COIL CHAIN**

No. 4

No. 3

No. 2

No. 1

No. 0

No. 00



B2530

Number ....	6	5	4	3	2	1	0	00
Price per 100 ft..	6.50	6.50	6.60	6.80	7.20	7.80	8.80	10.00

Packed 100 feet in a box.

**SINGLE JACK CHAIN**

No. 8

No. 10

No. 12

No. 14

No. 16



B2531

Number .....	8	10	12	14	16
Price, Iron.....per package	.95	.80	.44	.40	.30
" Brass....." "	5.25	3.50	2.05	1.35	.86

Packed 12 yards in a package.

# MANILA ROPE



B2535

## HAWSER LAID DRILLING CABLE



B2536

# MANILA ROPE

Diam.....Inches	$\frac{7}{16}$ and Larger	$\frac{3}{8}$	$\frac{5}{16}$ and $\frac{1}{4}$	$\frac{3}{16}$
Price.per pound	Base Price	Advance .00 $\frac{1}{2}$	Advance .01	Advance .01 $\frac{1}{2}$

Manila Rope is put up in coils of 1200 feet, or half coils of 600 feet. Rope cut to special length when required.

Rope cut to order cannot be returned.

# MANILA ROPE FOR WELL DRILLING

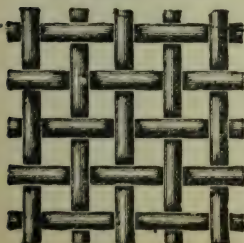
Bull Ropes.....	2, 2 $\frac{1}{8}$ , 2 $\frac{1}{4}$ , 2 $\frac{1}{2}$ , 2 $\frac{3}{4}$ , 3 inch	} Special Prices
Drilling Cables (Hawser Laid).....	1 $\frac{5}{8}$ , 1 $\frac{3}{4}$ , 1 $\frac{7}{8}$ , 2, 2 $\frac{1}{8}$ , 2 $\frac{1}{4}$ , 2 $\frac{1}{2}$ "	
Sand Pump Lines ..	" 1 $\frac{1}{2}$ , $\frac{3}{4}$ , $\frac{3}{8}$ , $\frac{7}{16}$ , 1, 1 $\frac{1}{8}$ "	
Sucker Rod Lines ..	" 1 $\frac{1}{4}$ , 1 $\frac{1}{8}$ , 1 $\frac{1}{2}$ , 1 $\frac{3}{4}$ "	
Tubing Lines ..	" 1 $\frac{3}{4}$ , 1 $\frac{7}{8}$ , 2, 2 $\frac{1}{8}$ , 2 $\frac{1}{4}$ , 2 $\frac{1}{2}$ "	

An additional 1 cent a pound is charged when rope is cut to order.

# APPROXIMATE WEIGHT OF ROPE, PER FOOT

Size .....inches	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	1	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{5}{8}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	2	2 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$
Drilling Cables. . .pounds	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{9}{10}$	2 $\frac{1}{8}$
Sand Pump Lines ..	" $\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{3}{8}$	..	..	...	...	...	...	....	...
Ordinary Manila... "	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$

4 x 4 MESH, No. 12



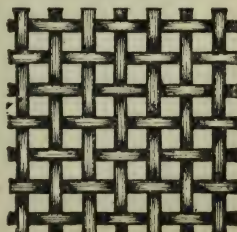
## WIRE CLOTH

B2537

For Mining Use  
or for  
Smoke Stack, etc.

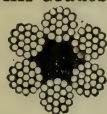
2 to 8 Mesh, Per sq. ft. \$ .38  
10 to 12 " " " .48

6 x 6 MESH, No. 14



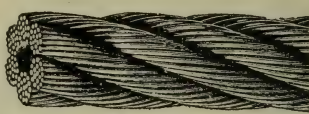
## WIRE HOISTING ROPE — With Hemp Center

**ROUND  
STRAND**  
Made in  
All Grades

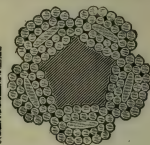


(6 x 19). B2540

B2540½



**PATENT FLATTENED STRAND**  
A. Leschens & Sons Rope Co., Sole Mfrs.



(5 x 28). B2541



(6 x 25). B2542

Hoisting Rope is made with 6 strands of 19 wires each also. Flattened strand is made 5 strands of 28 wires each, or 6 strands of 25 wires each. Flattened strand Ropes have 150 per cent more wearing surface than ordinary ropes.

Ropes with one extra wire strand (instead of hemp) in center, add to list 10 %.

## Price List B2540. 6 x 19 Wire Rope.

Diameter in Inches	Average Weight of Rope per Foot	Trade Mark Registered A. LESCHENS & SONS ROPE CO., Sole Mfrs.				Crucible Cast Steel		Plough Steel		Sweeds Iron		Minimum Size of Drums or Sheaves in Feet, for Crucible Steel	
		Hercules Steel		Special Steel		Price per Foot in Cents	Allowable Workin- g Strain in Tons of 2,000 lbs.	Price per Foot in Cents	Allowable Working Strain in Tons of 2,000 lbs.	Price per Foot in Cents	Allowable Working Strain in Tons of 2,000 lbs.		
		Price per Foot in Cents	Allowable Working Strain in Tons of 2,000 lbs.	Price per Foot in Cents	Allowable Working Strain in Tons of 2,000 lbs.								
$\frac{1}{4}$	.10	.....	.....	10 $\frac{1}{2}$	.54	9	.48	12	.60	6 $\frac{1}{2}$	.24	*	$\frac{1}{2}$
$\frac{5}{16}$	.15	.....	.....	10 $\frac{3}{4}$	.81	9 $\frac{1}{4}$	.68	12 $\frac{1}{4}$	.90	6 $\frac{3}{4}$	.34		$\frac{3}{8}$
$\frac{3}{8}$	.22	14 $\frac{1}{2}$	1.4	11	1.15	9 $\frac{1}{2}$	1.00	12 $\frac{1}{2}$	1.31	7	.50		1
$\frac{7}{16}$	.30	15	2.	11 $\frac{1}{2}$	1.56	10	1.36	13	1.77	7 $\frac{1}{2}$	.68		1 $\frac{1}{4}$
$\frac{1}{2}$	.39	16 $\frac{1}{2}$	2.5	12 $\frac{1}{2}$	2.02	11	1.76	14	2.28	8	.88		1 $\frac{1}{2}$
$\frac{5}{8}$	.50	20	3.4	14	2.54	12	2.20	.....	.....	10	1.10		1 $\frac{3}{4}$
$\frac{3}{4}$	.62	22 $\frac{1}{2}$	4.	16 $\frac{1}{2}$	3.16	14	2.72	19	3.60	12	1.36		2 $\frac{1}{4}$
$\frac{7}{8}$	.89	30	5.8	22	4.40	18	3.88	26	5.00	16	1.94		3
1	1.20	39	7.2	28	6.00	23	5.20	34	6.80	20	2.60		3 $\frac{1}{2}$
$1\frac{1}{8}$	1.58	49	10.	36	7.80	30	6.80	43	8.80	26	3.40		4
$1\frac{1}{4}$	2.00	57 $\frac{1}{2}$	12.	45	9.80	38	8.40	52	11.2	33	4.20		4 $\frac{1}{2}$
$1\frac{3}{8}$	2.45	71 $\frac{1}{2}$	15.2	55	11.6	46	10.0	63	13.4	40	5.00		5
$1\frac{1}{2}$	3.00	90	19.2	67	14.4	56	12.4	77	16.4	48	6.20		5 $\frac{1}{2}$
$1\frac{3}{4}$	3.55	109	22.6	80	16.8	66	14.4	93	19.2	57	7.20		5 $\frac{3}{4}$

## Price List B2541, 5 x 28, and B2542, 6 x 25, Wire Rope.

¾	.20	.....	.....	.....	.....	.....	.....	.....	9½	.5	.....
1	.38	20¼	2.7	17½	2.22	14½	1.9	.....	10½	.8	1½
1 1/8	.47	25	3.8	19½	2.8	.....	.....	.....	13	1.0	.....
1 1/4	.57	28	4.5	22½	3.4	18¼	3.0	.....	15½	1.2	2¼
1 1/2	.83	37½	6.4	30	4.9	24	4.2	.....	21	1.8	3
1 3/8	1.20	49	8.1	38	6.6	30	5.8	.....	26	2.6	3½
1 3/4	1.58	60	11.2	48	8.6	39½	7.6	.....	34	3.4	4
2	2.00	71	13.4	59	10.8	50	9.4	.....	43	4.2	4½
2 1/8	2.50	89	16.8	70	12.8	59½	11.2	.....	52	5.6	5
2 1/4	3.00	112	21.2	.....	.....	73	13.8	.....	62½	6.8	5½
2 1/2	3.65	137	24.8	05	18.6	86	16.2	.....	74	8.0	6

The approximate breaking strain in tons for wire rope is about five times the allowable working strain as given above.

\* The minimum diameter of sheave or drum, over which wire rope should be run as given above, is for crucible cast steel and special steel ropes, the other grades requiring considerably larger diameter drums.

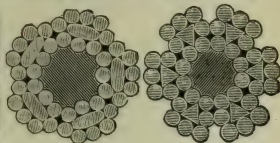
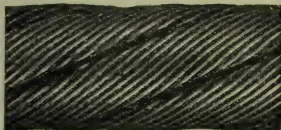
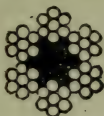


# WIRE HAULAGE AND TRANSMISSION ROPE

With Hemp Centre

**ROUND STRAND**  
Made in all Grades

**PATENT FLATTENED STRAND**  
A. Leschens & Sons Rope Co., Sole Mfrs.



(6 x 7). **B2543**

**B2543½**

(5 x 9). **B2544** (6 x 8). **B2545**

Haulage or Transmission or Standing Rope is made with 6 strands of 7 wires each, also Flattened Strand is made of 5 strands of 9 wires each or 6 of 8 wires.

Flattened Strand Ropes have 150 per cent more wearing surface than round.

Ropes made with one extra wire strand instead of the hemp centre, add 10%.

The wires used in making Haulage or Transmission Rope are much larger diameter than used in hoisting rope, consequently the ropes are stiffer and require sheaves 50 to 60 per cent larger diameter than the hoisting rope.

## Price List B2543. 6 x 7 Wire Rope.

Diameter in Inches	Average Weight per Foot	Trade Mark Registered A. LESCHENS & SONS ROPE Co., Sole Mfrs.				Crucible Cast Steel		Plough Steel		Sweedes Iron		Minimum Size of Drums or Sheaves in Feet, for Crucible Steel
		Hercules Steel		Special Steel		Price per Foot in Cents	Allowable Work- ing strain in tons of 2,000 lbs.	Price per Foot in Cents	Allowable Work- ing strain in tons of 2,000 lbs.	Price per Foot in Cents	Allowable Work- ing Strain in tons of 2,000 lbs.	
		Price per Foot in Cents	Allowable Work- ing strain in tons of 2,000 lbs.	Price per Foot in Cents	Allowable Work ing strain in ton of 2,000 lbs.							
$\frac{3}{32}$	.121	.....	.....	.....	.....	4	.56	.....	.....	3 $\frac{1}{4}$	.28	† 1 $\frac{1}{2}$
$\frac{1}{8}$	.15	.....	.....	.....	.....	4 $\frac{1}{2}$	.68	.....	.....	3 $\frac{3}{4}$	.34	1 $\frac{3}{4}$
$\frac{5}{16}$	.22	.....	.....	6	1.11	5 $\frac{1}{2}$	.96	.....	.....	4 $\frac{1}{2}$	.48	2
$\frac{3}{8}$	.30	.....	.....	7 $\frac{1}{4}$	1.50	6 $\frac{1}{2}$	1.32	.....	.....	5 $\frac{1}{2}$	.66	2 $\frac{1}{4}$
$\frac{7}{16}$	.39	13	2.3	9 $\frac{1}{2}$	1.94	7 $\frac{1}{2}$	1.68	11	2.20	6 $\frac{1}{2}$	.84	2 $\frac{1}{2}$
$\frac{1}{2}$	.50	.....	.....	11 $\frac{1}{2}$	2.46	9	2.12	14	2.80	8	1.06	3
$\frac{5}{8}$	.62	20	3.7	14	3.02	11	2.64	17	3.40	10	1.32	3 $\frac{1}{2}$
$\frac{3}{4}$	.75	.....	.....	.....	.....	13 $\frac{1}{2}$	3.16	.....	.....	12	1.58	4
$\frac{7}{8}$	.89	28	5.1	20	4.20	16	3.72	25	4.80	14	1.86	4 $\frac{1}{2}$
1	1.20	35	6.7	26	5.60	22	4.80	32	6.40	17 $\frac{1}{2}$	2.40	5
1 $\frac{1}{8}$	1.58	46	9.4	34	7.40	28	6.40	41	8.40	23	3.20	5 $\frac{3}{4}$
1 $\frac{1}{4}$	2.00	56	11.6	44	9.20	36	8.00	51	10.6	29	4.00	6 $\frac{1}{4}$
1 $\frac{1}{2}$	2.45	70 $\frac{1}{2}$	14.8	53	11.2	43	9.60	61	12.8	36	4.80	7 $\frac{1}{4}$
1 $\frac{3}{4}$	3.00	.....	.....	.....	.....	51	11.6	.....	.....	43	5.80	8
2	3.55	.....	.....	.....	.....	60	13.6	.....	.....	51	6.80	8 $\frac{1}{2}$

## Price List B2544, 5 x 9, and B2545, 6 x 8, Wire Rope.

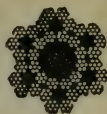
3/32	.25	.....	11	1.2	7	1.0	.....	.....	.....	.....	.....	2
1/8	.41	16 1/4	2.6	14	2.1	10	1.8	.....	.....	8 1/4	.9	2 1/2
5/16	.73	25	4.2	18	3.3	14	2.8	.....	.....	12 1/2	1.4	3 1/2
3/8	1.00	35	6.	27	4.6	20 1/2	4.0	.....	.....	17 1/2	2.0	4 1/2
7/16	1.35	44	7.6	35	6.2	27 1/2	5.4	.....	.....	22	2.7	5
1/2	1.80	58	10.6	45	8	35	7.2	.....	.....	29	3.6	5 3/4
5/8	2.30	70	12.8	54	10	45	9.0	.....	.....	36 1/2	4.5	6 1/4
3/4	2.80	88	16.	68	12.4	54	10.8	.....	.....	45	5.4	7 1/4
7/8	3.30	.....	.....	80	14.6	64	12.8	.....	.....	.....	.....	8
1	4.40	.....	.....	93	17	75	15.0	.....	.....	.....	.....	8 1/2

For breaking strain, etc., see remarks bottom of preceding page.

† Table drum diameters is for Crucible Steel Rope. See bottom preceding page.



## TILLER ROPE



B2546

Diameter.....Inch.	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Iron.....per foot	.07½	.08	.09	.10	.11	.14	.17	.22	.27	.33
Cast Steel....."	.11	.12½	.14	.15	.17	.19	.24	.30	.36	.43
Av'ge Wt. per ft....lb.	0.07	0.11	0.16	0.21	0.28	0.35	0.43	0.62	0.84	1.10

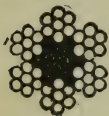
Tiller ropes are used for steering ropes, hand ropes on elevators, and in any place where a smooth and extremely flexible rope is required. They are composed of 252 wires, and are made up of a hemp core, around which are twisted six ropes, each of which consists of six strands, inclosing a hemp center. They will pass around very small pulleys and sheaves. The wires are necessarily very fine, and should not be subjected to scraping of any kind or much frictional wear.

## GALVANIZED IRON WIRE ROPE

For Ships' Rigging, Guys for Derricks, Etc.

Made with six strands of 7 usually, or of 12 wires, laid around a hemp center.

When made with wire center add 10 per cent. to price per foot.  
Galvanized rope must not be used as a running rope.

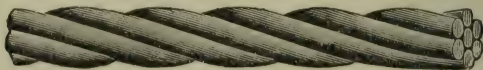


B2547

Approximate Diameter in Inches	Circumference in Inches	Estimated Weight Per Foot. Hemp Center	7 Wires Coarse Laid. Price Per Foot, Cents	12 Wires Fine Laid. Price Per Foot, Cents	Breaking Strain Tons of 2000 lbs.	Approximate Diameter in Inches	Circumference in Inches.	Estimated Weight Per Foot. Hemp Center	7 Wires Coarse Laid. Price Per Foot, Cents	12 Wires Fine Laid. Price Per Foot, Cents	Breaking Strain Tons of 2000 lbs.
1½	4¾	3.60	35	37	32	$\frac{5}{8}$	2	0.64	8	....	5.8
1¼	4½	3.25	31	33	29	$\frac{9}{16}$	1¾	0.49	7	....	4.4
1⅓	4¼	2.90	27	29	26	$\frac{11}{16}$	1½	0.36	6	....	3.2
1¼	4	2.55	24	25	23	$\frac{7}{16}$	1¼	0.25	5	....	2.3
1⅓	3¾	2.25	21	22	20	$\frac{3}{8}$	1⅓	0.20	4	....	1.8
1½	3½	1.95	18	19	18	$\frac{1}{2}$	1	0.16	3½	....	1.4
1¼	3¼	1.70	16	17	15	5 str	and 7 Wires each.	0.123	3	....	1.1
1	3	1.44	14	15	13	$\frac{9}{32}$	$\frac{3}{8}$	0.090	2½	....	0.81
¾	2¾	1.21	12	..	11	$\frac{1}{4}$	$\frac{3}{4}$	0.063	2¼	....	0.56
13/16	2½	1.00	10	..	9	$\frac{3}{16}$	$\frac{1}{2}$	0.040	2	....	0.36
3/8	2¼	0.81	9	..	7.3						

## GALVANIZED STEEL WIRE STRAND

For Smoke Stacks, Guys, Signal Strand, Trolley Span Wire, Etc.  
Seven Wires Twisted Together



B2548

Diameter.....inch	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$
Price per 1000 ft.....	.80	1.00	1.15	1.25	1.50	1.75	2.25	2.75	3.75	4.50
Weight " " " " " "	2	3.2	5.5	7.5	9.5	12.5	21.0	29.5	41.5	51.0
A'prox. Br'k. Strain "	400	500	900	1,400	1,800	2,300	3,800	5,000	6,500	8,500

Intermediate sizes take next higher list.

CLOSED SOCKETS



B2550

WIRE ROPE  
ATTACHMENTS

OPEN SOCKETS



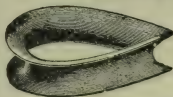
B2551

HOOK AND THIMBLE



B2552

GALV. THIMBLE



B2554

SWIVEL HOOK  
AND SOCKET



B2553

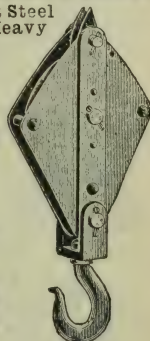
HOOK AND EYE TURN BUCKLE



B2555

WIRE ROPE BLOCKS

Wrought Steel  
Extra Heavy



B2560

IRON SHEAVES  
Iron Bushed



B2559

CROSBY CLIP



ATLAS B2556  
Wrought Clip

CAST CLAMP



B2558



B2557

B2560. Can furnish Single, Double, Triple, or Snatch.

Diam. Rope....in.	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{1}{2}$
B2550—Loose ...	.70	.70	.85	.85	1.10	1.10	1.35	1.65	1.85	2.40	3.30	4.50	6.00	6.80
Attached	1.60	1.60	1.85	2.00	2.25	2.35	2.65	3.15	3.85	4.65	6.15	8.00	10.25	11.80
B2551—Loose ...	.85	.85	1.00	1.00	1.35	1.35	1.65	2.10	2.50	3.15	4.50	6.10	....	....
Attached	1.75	1.75	2.00	2.15	2.50	2.60	2.95	3.60	4.50	5.40	7.35	9.60	....	....
B2553—Loose ...	....	....	5.40	....	7.10	....	9.20	10.50	14.00	16.70	24.00	....	....	....
Attached	....	....	6.40	....	8.25	....	10.50	12.00	16.00	18.95	26.85	....	....	....
B2552—Loose . .	.65	.65	.70	.75	.80	1.10	1.40	1.85	2.90	3.75	4.40	4.60	5.40	7.00
*Attached	1.75	1.75	1.85	1.95	2.05	2.40	2.85	3.75	5.35	6.70	8.15	9.20	11.15	13.50
B2554—Loose ...	.08	.08	.09	.10	.11	.12	.13	.15	.16	.20	.28	.33	.42	.50
‡Spliced on	1.10	1.10	1.15	1.20	1.25	1.30	1.55	2.00	2.55	3.00	3.90	4.70	5.75	6.50
B2556—"Crosby"	.25	.25	.25	....	.30	....	.35	.40	.45	.50	.50	.50	.55	.60
B2557—"Atlas" ..	.25	.25	.25	....	.30	....	.35	.40	.45	.50	.60	.65	....	.75
B2558—Clamps, Double Barrel, with Bolts	....	....	.45	....	.60	....	.90	1.05	1.30	1.75	1.90	2.50	....	3.80
B2555..... )	.85	.90	1.10	1.25	1.55	....	2.00	2.75	3.50	4.25	5.25	6.25	7.50	9.00
Length Thread. inches (	3 $\frac{3}{4}$	4	4 $\frac{3}{4}$	5 $\frac{1}{4}$	6	....	7 $\frac{1}{4}$	9 $\frac{1}{4}$	11	12 $\frac{1}{4}$	13 $\frac{1}{4}$	14 $\frac{1}{4}$	15 $\frac{1}{4}$	16
B2559—Diameter..... inches							6	8	10	12	14	16	18	
Sheaves, Plain Bore.....							1.00	1.25	1.60	2.00	2.50	3.00	4.00	
Self Lubricating, Phos. Bronze Bushed							2.50	3.00	3.50	4.00	4.50	5.00	6.00	

B2560—Blocks: Single, 12 in., \$20.00; 14 in., \$22.00; 16 in., \$32.00; Double, is extra \$7.00; Triple, extra \$17.00, either size. Diameter is at bottom of groove. Other patterns of Blocks, and Sheaves, and Rubber Filled Sheaves quoted on application.

\* For Iron Rope, list is lower (approximately \*30%) (approximately \*10%).

## D HANDLE SHOVELS AND SPADES

SOCKET OR HOLLOW  
BACK COAL

SHOVEL  
Square Point



B2561

SCOOP



B2562

STRAPPED  
STEEL  
SPADE

D HANDLE

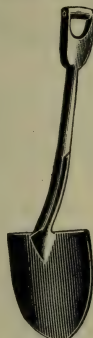


B2563

STRAPPED  
STEEL SHOVELS

D HANDLE  
Square Point

B2564

D HANDLE  
Round Point

B2565

COAL  
AND COKE  
FORKS

SOLID STEEL  
SHANKS  
Capped Ferrules



B2566

LONG HANDLE SHOVELS AND SPADE

Square Point

Round Point

Spade



B2567



B2568



B2569

Prices quoted on application.

State quantity wanted, purpose to be used for, and dimensions of blade desired; also whether a cheap, medium, or high grade is wanted.

PICKS

R. R. ADZE EYE



B2570

TAMPING ADZE EYE



B2571

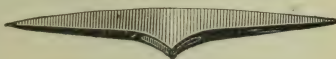
6 to 7 Pounds.....dozen	13.50	7 to 8 Pounds.....dozen	18.00
7 " 8 " " " " "	14.50	8 " 9 " " " " "	19.00
8 " 9 " " " " "	16.50		

CONTRACTORS' ADZE EYE



B2572

SHORT EAR COAL CUTTING



B2573

Pounds.....	8	8½	9	Pounds..	2	2½	3	3½	4	4½
Dozen.....	19.00	20.00	21.00	Dozen...	8.50	9.00	9.50	10.00	10.50	11.00

HANDLES

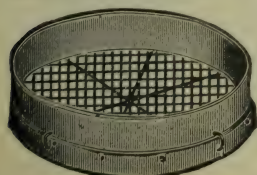
Pick or Mattock, 36 inch.....	Extra Quality	No. 1	No. 2
Per Dozen.....	4.50	3.00	2.25

Coal Pick Handles .....	per dozen	1.75
-------------------------	-----------	------

Sledge Handles .....inches	24	26-28	30-32	34-36	38	40
Per Dozen .....	1.45	1.90	2.10	2.50	2.65	2.85

Machinist Hammer Handles.....	11 in. to 15 in.	16 in.	18 in.	20 in.	22 in.
Per Dozen.....	.70	.80	.90	1.05	1.15

Hatchet Handles, 12 and 13 inch, 70c per dozen; 14 and 15 inch, 75c per dozen.



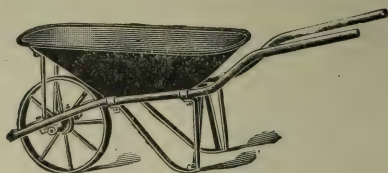
B2574

MOULDERS' RIDDLE

Number .....	2 to 16	18 to 24
Diameter.....inches	18	18
Steel Wire.....per dozen	6.50	8.00
Galvanized Wire... " "	7.30	12.00



## TUBULAR STEEL WHEELBARROWS



B2578

No.	Gauge Steel in Tray	SIZE OF TOP, INCH		Capacity Cubic Ft.	Weight Pounds	Price Each
		Long	Wide			
Dirt and Mining	2A	15	32 in.	3	70	12.00
	13A	15	32 "	5	75	15.00
	14A	12	32 "	3	90	15.00

No.	Gauge Steel in Tray	SIZE AT TOP, INCH		Capacity Cubic Feet.	Capacity Coal Pounds	Weight Pounds	Price Each
		Long	Wide				
Coal	15A	14	36	4½	270	86	15.00
	16A	12	36	4½	270	95	18.00
	17A	10	36	4½	270	110	20.00

No.	Gauge Steel in Tray	SIZE OF TOP, INCH		CAPCTY., POUNDS		Weight Pounds	Price Each
		Long	Wide	Coke	Coal		
Coke } 18A 18½A 19A	14	42	33	275	430	100	20.00
	16	42	33	275	430	90	19.00
	16	49	40	400	....	100	24.00

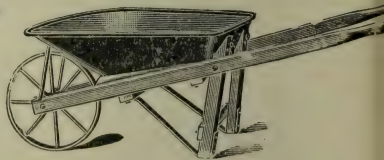
## WHEELBARROWS, WITH WIRED EDGE STEEL TRAY AND HEAVY STEEL WHEELS

Nos. 1B and 2B



B2579

Nos. 3C, 4C, and 5C

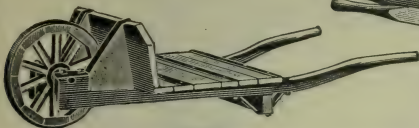


B2580

No.	Diameter of Wheel Inches	Gauge of Steel in Tray	SIZE AT TOP, INCHES			Capacity Cubic Feet	Weight Pounds	Price Each
			Length		Width			
1B	17	16	33	x	33	..	55	5.00
2B	17	14	33	x	33	..	60	5.50
3C	17	16	32	x	29	3	55	5.50
4C	17	14	32	x	29	5	65	6.00
5C	17	14	29	x	36	4½	58	6.50

5C is 8½ inches deep at front and 6 inches at back.

**BENT HANDLE,  
WOOD WHEEL**



**B2581**

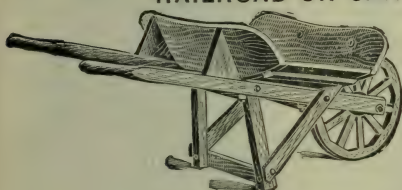
**BOLTED MORTAR BARROW**



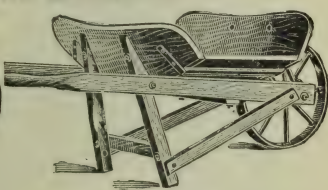
**B2582**

Prices, dimensions, and description on application.  
Can be furnished with Patent Steel Spoke Wheel on special order.

**RAILROAD OR CANAL BARROWS**

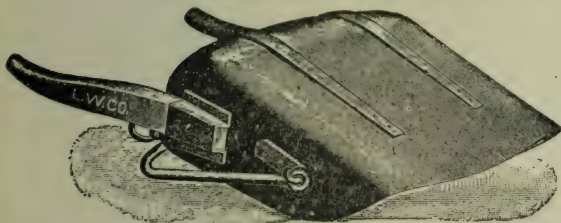


**B2583**



**B2584**

Prices and dimensions quoted on application.



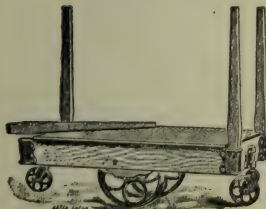
**SOLID  
STEEL  
SCRAPER**

**B2585**

**With Runners**

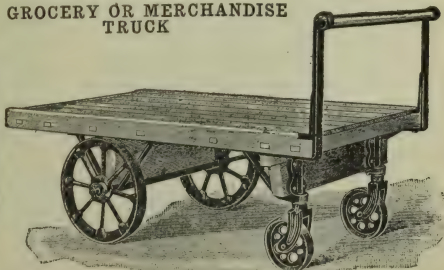
Made with or without Runners. Made in three sizes. Capacity, three, five, and seven cubic feet. Prices and dimensions on application.

**DOUBLE END TILTING  
TRUCK**



**B2586**

**GROCERY OR MERCHANDISE  
TRUCK**



**B2587**

See **Price List** and description bottom of following page.

## WAREHOUSE TRUCKS

BAG TRUCK

FULL IRONED

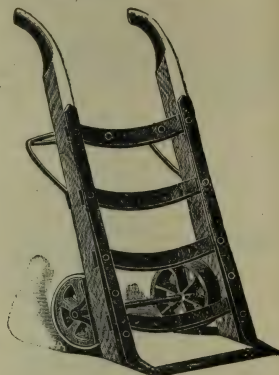
BARREL TRUCK



B2583



B2589



B2590

Iron Wheels, 4.50; Rubber  
Tired, 8.00  
Length, 42 in.; Wheels, 6 in.

## WAREHOUSE TRUCKS

Length Handles Inches.	Width Truck Inches	Diam. Wheels Inches	FULL IRONED		*HALF IRONED		BARREL TRUCKS, FULL IRONED	
			Rub'ered Wheels	Iron Wheels	Rub'ered Wheels	Iron Wheels	Rub'ered Wheels	Iron Wheels
48	19	7½	16.00	8.00	15.00	7.00	17.00	9.00
52	20	8½	19.00	10.50	18.50	9.00	20.00	11.00
56	22	9½	28.00	15.00	24.00	13.00	28.50	16.00
62	24	10½	34.50	18.50	32.00	16.00	....	....

\*The 48-inch Warehouse Trucks have only three cross bars.

\*The Half Ironed Trucks have no iron on the cross bars, and the handles are ironed only part of the length.

B2586

(See illustrations bottom of preceeding page.)

B2587

No.	Width Truck Feet	B'tw'n Stakes Feet	Diam. Wheels Inches	Diam. Casters Inches	Per Doz.
1	2	4	12	7	130.00
2	2	4	16	7	144.00
3	3	5	12	7	154.00
4	3	5	16	7	168.00

Made of hardwood for heavy work.

If with Wooden Cross Bar Racks on each end, stationary or adjustable, add to list \$36.00 dozen. Also made with iron racks at special price.

Trucks with Rubber Tired Wheels and Casters quoted on application.

*Plat- form Feet	Weight Lbs.	Each	*Plat- form Feet	Weight Lbs.	Each
2 x 3	125	24.00	3 x 4	173	27.00
2 x 4	152	25.00	2½ x 5	175	27.00
2½ x 4	172	26.10	3 x 5	192	29.25
2 x 5	161	26.10	....	....	....

Wheels are 2-inch and Casters 1¼-inch tread. Capacity 1200 lbs.

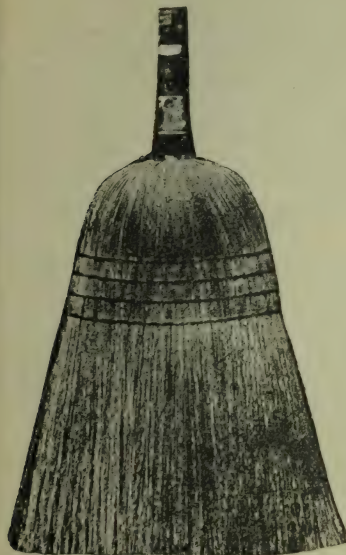
Add to list if with Round Rubber Tires on Grooved Wheels and Casters \$8.00, or Patent Rubber Band Tires \$12.00.

\*Add 4 inches for extreme length, longer trucks on application.

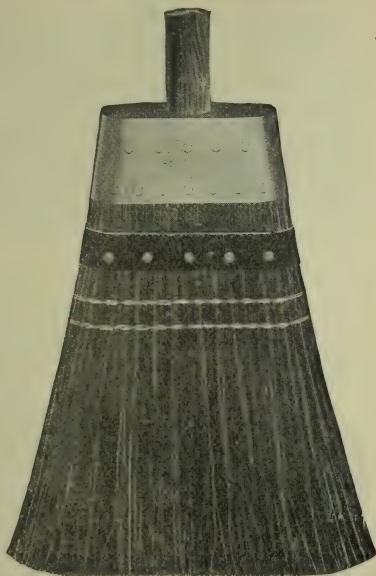
No. 0 to 8 have 12-inch wheels and 6-inch casters; height 14 inches. Trucks with 18-inch wheels and 9-inch casters, 3000 lbs. capacity, quoted on application.

WOUND MILL BROOMS

CAPITAL BROOMS



B2600



B2601

	PER DOZEN	
	All Broom Corn	Rattan Mixed
30 lb. Light, 4-seam	5.50	6.00
35-lb. Heavy, 4- "	6.00	6.50
40-lb. Ex. Hea, 5- "	7.00	7.50
*33-lb. Medium.....	5.50	6.00
*36-lb. Heavy.....	6.00	6.50

\*Metal core and instead of the two upper seams a steel band is riveted on.

	PER DOZEN	
	All Broom Corn	Rattan Mixed
No. 3 (equals 33-lb.)	4.50	5.00
No. 4 (equals 36-lb.)	5.00	5.50
No. 5 (equals 40-lb.)	5.50	6.00
Special (equals 42-lb.)	6.50	8.50

Nos. 3 and 4 trimmed 16 inches long. No. 5 and Special trimmed 17 inches long.

The Capital pattern Broom varies slightly in weight from the rating of Wound Brooms on account of the material trimmed away at the shoulder.

SNOW AND SWITCH BROOMS — B2602

For Steam Railways

Similar in appearance to the Capital B2601, except instead of two rows of stitching has one very heavy row of stitching.

All Rattan.....per dozen 6.00 All Bamboo.....per dozen 5.50

Can be furnished with Chisel attached to end of Handle, at special price.



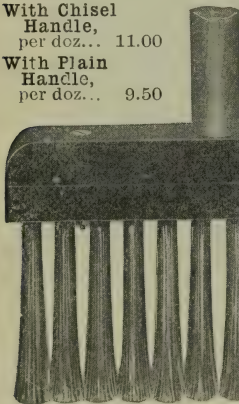
## UPRIGHT CURVE BROOMS

**B2603**

This is a first-class wire broom, made in the usual manner, and we furnish them complete with handles. Being upright it is used in the same manner as our Track Bamboo. The block is 11 in.,  $1\frac{1}{4}$  in. wide and the wire projects 5 inches.

**With Chisel  
Handle,**  
per doz... 11.00

**With Plain  
Handle,**  
per doz... 9.50



**B2603**

Handles,  
if  
wanted,  
are  
extra.  
60c.  
per  
dozen

## PUSH BROOMS

**B2604**

Illustrated at bottom of page.

Rows Wide	Block Inches Long	Bass Per Doz.	Rattan Per Doz.	Bamboo Per Doz.
4	14	8.00	7.00	6.00
4	16	9.00	8.50	7.00
5	14	10.00	8.00	7.00
5	16	11.50	10.00	8.00

Material projecting 6 inches from face of block.

## FLAT STEEL WIRE BROOMS

**B2605**

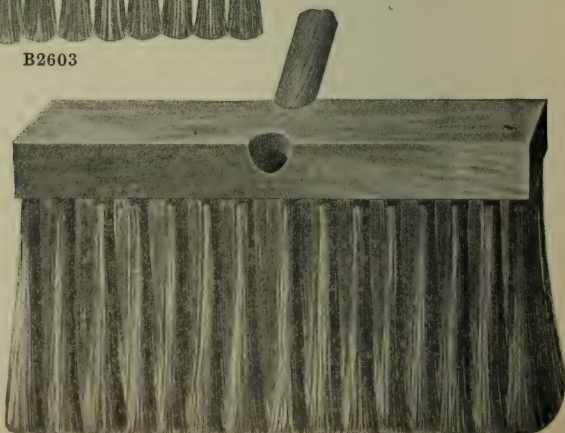
Similar to B2604. For Street or Stable use.

Length Inches	Rows Wide	Inch Projection	Per Dozen
12	4	5	8.00
14	4	5	9.00
16	4	5	10.00

## EXTRA STIFF ROOFERS OR PAVERS BROOM

Similar to B2604.

4 rows wide, 14-in. block Price, Per Doz.....	10.00
--	-------



**B2604**

# MOULDER'S BRUSH

## Number 6 soft—

Is in block 9 inches long, 1½ inches wide, 14 rows long, 3 rows wide with large sets, very full and bushy.

Price.....per dozen 6.00

## Number 7 soft—

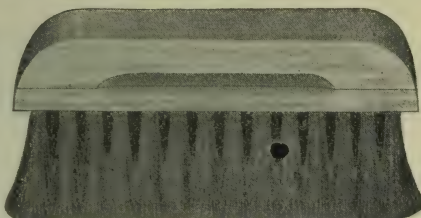
Same length block, the same rows in length but is four rows wide, making it extra heavy.

Price.....per dozen 7.00

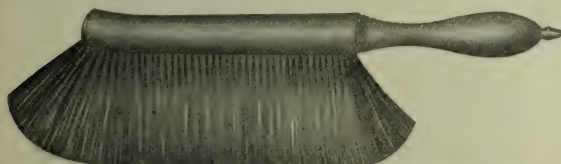
## Number 10 hard—

Is in block 9 x 2¾ inches, has 21 rows in length and 7 in the width, good quality stiff bristles.

Price.....per dozen 7.00



B2606



COUNTER  
BRUSHES

B2607

Hardwood blocks, with handsome finish. The lengths given are actual brush part. The handle is 6 inches long in addition.

## PRICE PER DOZEN

Tampico fibre, wire fastened.....	8-inch— 4.50	10-inch— 5.50
Black hair, wire fastened.....	8- " 10.50	10- " 13.50
Imported bristle, cement fastened, extra heavy for flour mills.....	8- " 18.00	10- " 22.50

## No. 8 BENCH DUSTER

Design Similar to Counter Duster

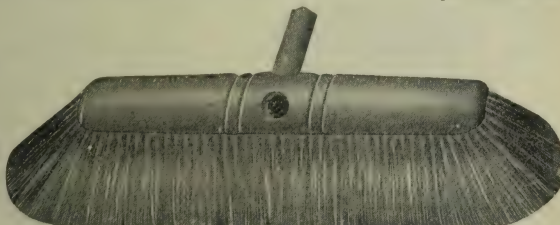
For cleaning benches and machines of sawdust, iron filings, etc. Rough, handle 6-inch, brush 8-inch, filled with Tampico, projects 2½ inches.

Price.....per dozen 3.50

## FLOOR BRUSHES

B2608

Hardwood Block,  
finished threaded  
handle with each  
brush.



## PRICE PER DOZEN

	14-in. Block	16-in. Block	18-in. Block
Tampico fibre, wire fastened.....	9.00	11.00	12.00
Black hair, wire fastened.....	21.50	26.00	30.00
Mill sweeps, imported bristle, extra heavy.....	42.00	48.00	54.00

HERCULES STEEL SCOOP

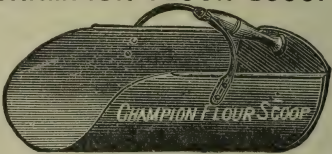


B2610

- Bushel Scoop, net..... 3.00
- Half-bushel Scoop, net..... 2.50

It is made of fine sheet steel, light in weight, and will outwear several of the ordinary iron scoops.

CHAMPION FLOUR SCOOP



B2611

Size, Inches	Tin—Net Price	Steel—Net Price	Galvanized Steel.— Net Price
8	.60	.75	.85
10	.65	.85	1.00
12	.75	1.00	1.10
14	1.00	1.25	1.25

The Champion is made of sheet steel, or XXXX tin plate, with handle of wrought iron. The handle being placed in the center instead of at the end distributes the weight evenly, making the handling of material easier and quicker.



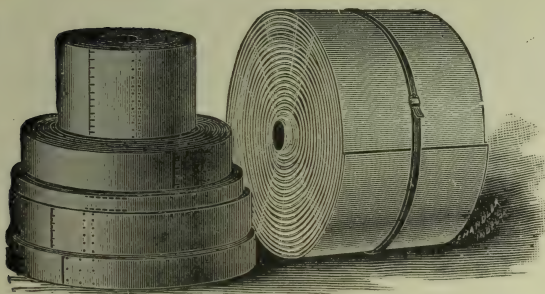
B2615

“ MOSHER ” BAG HOLDER

- Price ..... 5.00

This machine is a great success. It is adapted to all sizes of bags, from a 48-lb. flour sack to a 6-bushel gunny bag. One man can take off and put on from 15 to 20 bags a minute. Does not tear the bag. Is well made; malleable iron jaws; wrought iron pipe standards; steel spring, and only weighs 20 lbs. It pays for itself in a few days' time.

LEATHER BELTING



B3000

ADOPTED NOVEMBER 21, 1906.

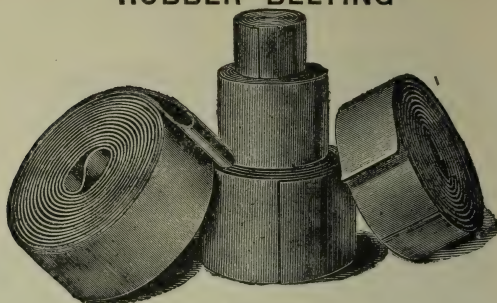
Width Inches	Price per Foot	Width Inches	Price per Foot	Width Inches	Price per Foot	Width Inches	Price per Foot
$\frac{1}{2}$	.12	4	.96	17	4.08	36	8.64
$\frac{3}{8}$	.15	$4\frac{1}{2}$	1.08	18	4.32	38	9.12
$\frac{3}{4}$	.18	5	1.20	19	4.56	40	9.60
$\frac{7}{8}$	.21	$5\frac{1}{2}$	1.32	20	4.80	42	10.08
1	.24	6	1.44	21	5.04	44	10.56
$1\frac{1}{4}$	.30	$6\frac{1}{2}$	1.56	22	5.28	46	11.04
$1\frac{1}{2}$	.36	7	1.68	23	5.52	48	11.52
$1\frac{3}{4}$	.42	8	1.92	24	5.76	50	12.00
2	.48	9	2.16	25	6.00	52	12.48
$2\frac{1}{4}$	.54	10	2.40	26	6.24	54	12.96
$2\frac{1}{2}$	.60	11	2.64	27	6.48	56	13.44
$2\frac{3}{4}$	.66	12	2.88	28	6.72	60	14.40
3	.72	13	3.12	29	6.96	...	.....
$3\frac{1}{4}$	.78	14	3.36	30	7.20	...	.....
$3\frac{1}{2}$	.84	15	3.60	32	7.68	...	.....
$3\frac{3}{4}$	.90	16	3.84	34	8.16	...	.....

Double Belts Twice the Price of Single. Extra Heavy Belts, Extra Prices.

ROUND BELTS—TWISTED. B3002				ROUND BELTS—SOLID. B3003	
Diam.	Per Foot	Diam.	Per Foot	Diam.	Per Foot
$\frac{1}{8}$ -inch	.08	$\frac{1}{8}$ -inch	.38	$\frac{1}{8}$ -inch	.07
$\frac{3}{16}$ "	.12	$\frac{3}{16}$ "	.48	$\frac{3}{16}$ "	.09
$\frac{1}{4}$ "	.17	$\frac{1}{4}$ "	.60	$\frac{1}{4}$ "	.14
$\frac{5}{16}$ "	.22	$\frac{5}{16}$ "	.80	$\frac{5}{16}$ "	.18
$\frac{3}{8}$ "	.27	1 "	.96	$\frac{3}{8}$ "	.24



## RUBBER BELTING



B3005

Inch	2-Ply Per Foot	3-Ply Per Foot	4-Ply Per Foot	5-Ply Per Foot	6-Ply Per Foot
1	.07	.09	....	....	....
1¼	.09	.11	....	....	....
1½	.11	.13	....	....	....
1¾	.13	.15	....	....	....
2	.15	.17	.21	....	....
2½	.18	.22	.26	....	....
3	.22	.26	.31	....	....
3½	.26	.30	.37	....	....
4	.30	.34	.42	.52	....
4½	.33	.39	.47	.58	....
5	....	.43	.52	.65	....
6	....	.52	.62	.77	.93
7	....	.60	.73	.91	1.09
8	....	.70	.84	1.05	1.26
9	....	....	.95	1.18	1.42
10	....	....	1.07	1.33	1.60
11	....	....	1.18	1.47	1.77
12	....	....	1.30	1.62	1.95
13	....	....	1.42	1.77	2.13
14	....	....	1.54	1.92	2.31
15	....	....	1.66	2.07	2.49
16	....	....	1.78	2.22	2.67
18	....	....	2.02	2.52	3.03
20	....	....	2.26	2.82	3.39
22	....	....	2.52	3.15	3.78
24	....	....	2.80	3.50	4.20
26	....	....	3.08	3.85	4.62
28	....	....	3.36	4.20	5.04
30	....	....	3.64	4.55	5.46

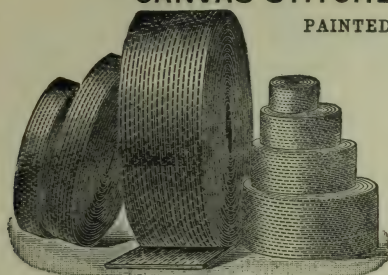
Intermediate widths at proportionate prices. Seven and eight ply belts made at an advance of seventy-five and one hundred per cent., respectively, on four-ply prices

For endless belts add three feet for making splice.

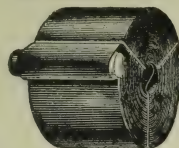
# CANVAS STITCHED BELTING

PAINTED

ENDLESS BELTS



B3008



B3009

Three extra feet will be charged for the Splice, subject to the regular discount

FOUR-PLY EQUAL TO SINGLE LEATHER		FIVE-PLY		SIX-PLY EQUAL TO LIGHT DOUBLE LEATHER		EIGHT-PLY EQUAL TO HEAVY DOUBLE LEATHER		TEN-PLY	
Inches	Per ft.	Inches	Per ft.	Inches	Per ft.	Inches	Per ft.	Inches	Per ft.
1	.10	2	.25	....	....	....	....	12	2.82
1 1/4	.13	2 1/2	.31	....	....	....	....	14	3.45
1 1/2	.15	3	.38	3	.44	....	....	..	....
1 3/4	.18	3 1/2	.44	3 1/2	.51	6	1.14	16	3.95
2	.20	4	.50	4	.58	7	1.33	18	4.44
2 1/4	.23	4 1/2	.56	4 1/2	.65	8	1.52	20	4.94
2 1/2	.25	5	.63	5	.73	9	1.71	22	5.43
2 3/4	.28	6	.75	6	.87	10	1.90	24	5.92
3	.30	7	.88	7	1.02	11	2.09	26	6.72
3 1/2	.35	8	1.00	8	1.16	12	2.28	28	7.24
4	.40	9	1.13	9	1.31	13	2.60	30	7.76
4 1/2	.45	10	1.25	10	1.45	14	2.79	32	8.27
5	.50	11	1.38	11	1.60	15	2.99	34	8.79
6	.60	12	1.50	12	1.74	16	3.19	36	9.31
7	.70	13	1.71	13	1.99	18	3.59	..	....
8	.80	14	1.84	14	2.13	20	3.99	40	10.34
9	.90	15	1.98	15	2.29	22	4.39	..	....
10	1.00	16	2.10	16	2.44	24	4.79	44	11.94
11	1.10	18	2.36	18	2.74	26	5.43	48	13.54
12	1.20	20	2.63	20	3.05	28	5.85	..	....
13	1.37	22	2.89	22	3.35	30	6.27	52	14.67
14	1.47	24	3.15	24	3.65	32	6.69	..	....
....	....	....	....	26	4.15	36	7.52	56	15.80
....	....	....	....	28	4.47	40	8.36	60	16.92
....	....	....	....	30	4.79	48	10.94	..	....

## Endless Thresher Belt B3009

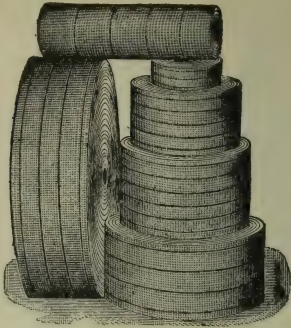
Made of the same material that our Roll Canvas Belt is made of and are well stitched. The Lap is made especially strong to withstand the hard strain these belts are put to.

## Carried in Stock as Follows:

6-inch 4-ply Belts in lengths from 80 feet to 160-feet. 7-inch 4-ply Belts in lengths from 80 feet to 160 feet. 7-inch 5-ply Belts in lengths from 130 feet to 160 feet. 8-inch 4-ply Belts in lengths from 80 feet to 160 feet. 8-inch 5-ply Belts in lengths from 140 feet to 160 feet. 9-inch and 10-inch Belts made to order.

**SOLID  
WOVEN  
SPECIAL**

(Not Painted)



**WHITE  
COTTON  
BELTING**

**B3014**

Two-Ply	Width.....inches	1	1½	2	2½	3	3½	4	5	6	7
	Price.....per foot	.04	.05	.06	.06½	.07	.08	.09	.13	.17	.19
	Width.....inches	8	9	10	12	14	16	18	20	22	24
	Price.....per foot	.21	.23	.26	.33	.41	.49	.57	.61	.65	.69
Three-Ply	Width.....inches	1½	2	2½	3	3½	4	4½	5	6	7
	Price.....per foot	.06	.08	.10	.12	.14	.15	.17	.19	.23	.27
	Width.....inches	8	9	10	12	14	16	18	20	22	24
	Price.....per foot	.31	.35	.39	.48	.60	.72	.82	.90	1.00	1.10
Four-Ply	Width.....inches	2	2½	3	3½	4	4½	5	6	7	8
	Price.....per foot	.12	.14	.16	.18	.21	.24	.26	.30	.34	.38
	Width.....inches	9	10	12	14	16	18	20	22	24	...
	Price.....per foot	.44	.50	.60	.75	.90	1.00	1.15	1.25	1.55	....
Five-Ply	Width.....inches	4	4½	5	5½	6	7	8	9		
	Price.....per foot	.34	.36	.38	.40	.42	.45	.50	.56		
	Width.....inches	10	12	14	16	18	20	22	24		
	Price.....per foot	.63	.75	.94	1.12	1.28	1.44	1.62	1.80		

Can furnish any width cotton belting up to 36 inches.

**COTTON SAND BELTING**

Width.....inches	1	2	3	4	5	6	8	10	12	14	16	18
Price.....per foot	.06	.07½	.10½	.15	.18	.24	.36	.48	.60	.72	.90	1.10

Best Method of Lacing **LEATHER, RUBBER, CANVAS, and COTTON BELTING**



**B3015**

## TO FIND THE LENGTH OF A BELT

When pulleys are small or about the same diameters, add the diameters of the two pulleys together, divide the result by two, and multiply the quotient by three and one-seventh. Add the product to twice the distance between the centers of shafts, and you have the length required.

### EXAMPLE

5 ft. diam. one pulley.  
3    "    "    "

2)8 sum of diameters.

4 =  $\frac{1}{2}$  sum.

3  $\frac{1}{4}$

12.57 ft.

20 ft. distance between centers.

2

40 ft.

12.57

52.57 ft. =

52 ft. 6  $\frac{1}{2}$  in. — length of belt.

In putting on belting it should be stretched as tightly as possible, and with wide belts this can be done best by the use of clamps secured firmly to each end of the belt and drawn together by clamp rods running parallel with and outside the edges of the belt. There is no danger of breaking, as a belt six inches wide and 3-ply thick will stand a direct strain of 5,000 pounds, and other sizes in proportion.

## HORSEPOWER OF BELTING

An easily remembered horsepower rule on which to base mental calculations for rubber belting is that a 4-ply rubber belt, running 4,000 feet per minute, will transmit 5 horsepower per inch of width. Proportionate powers for other plies and speeds.

In comparing Rubber and Leather beltings the relative power transmission values are generally considered to be as follows:

3 or 4 ply rubber belt = single leather belt.

5 or 6 ply    "    " = double    "    "

7 or 8 ply    "    " = triple    "    "

**1. To find the horsepower of any rubber belt:** Multiply together the number of plies in the belt, its width in inches, the pulley diameter in inches, and the speed in rotations per minute, then divide by 12,000.

**EXAMPLE.**—4-ply belt, 6 inches wide; 24-inch pulley; 400 r. p. m.

$$4 \times 6 \times 24 \times 400 \div 12,000 = 19.2 \text{ h. p.}$$

**2. To find the proper weight of belt to use:** Multiply the horsepower by 12,000 and divide by the product of the belt width in inches, the pulley diameter in inches, and the speed in rotations per minute.

**EXAMPLE.**—50 horsepower; 60 x 8-inch pulley; 260 r. p. m.

$$50 \times 12,000 = 600,000$$

$$60 \times 8 \times 260 = 124,800$$

$$600,000 \div 124,800 = 4.8 \text{ plies, or a 5-ply belt.}$$

**3. To find width and weight of belt:** First multiply the horsepower by 12,000; second, multiply the pulley diameter in inches by the speed in rotations per minute; divide the first by the second, and then divide by various numbers of plies till a desirable corresponding belt width is secured.

**EXAMPLE.**—180 horsepower; 58-inch pulley; 320 r. p. m.

$$12,000 \times 180 = 2,160,000$$

$$54 \times 320 = 17,280$$

$$2,160,000 \div 17,280 = 125$$

$$\text{For 6-ply: } 125 \div 6 = 20.43 \text{ (20 or 22-inch belt.)}$$

$$\text{For 7-ply: } 125 \div 7 = 17.86 \text{ (18-inch belt.)}$$

**4. To find the speed necessary, other conditions being fixed:** Multiply the horsepower by 12,000 and divide by the product of the number of plies in the belt, the belt width in inches, and the pulley diameter in inches.

**EXAMPLE.**—75 horsepower; 5-ply belt, 12 inches wide; 40-inch pulley:

$$75 \times 12,000 = 900,000$$

$$5 \times 12 \times 40 = 2,400$$

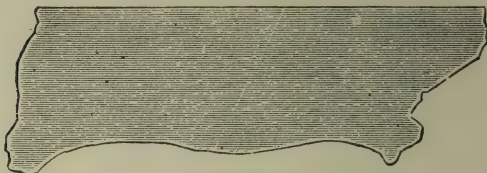
$$900,000 \div 2,400 = 375 \text{ r. p. m.}$$

## ARC OF CONTACT

The above formula presumes a wrap of 180 degrees, or one-half the circumference of the pulley. If the belt touches only three-fourths of the half circumference of the pulley, it can transmit only three fourths its rated power. Or if, by use of a tightener, the belt is made to touch five eighths of the whole circumference, one fourth more power can be transmitted than the formula would allow.



## LACE LEATHER



B3016

In Sides from 10 to 24 Square Feet.

Our Lace Leather is finding firm friends wherever used. It is made from selected hides and so prepared that it does not become hard or brittle with age.

We carry three qualities of Rawhide, also Indian Tanned and Special Tanned.

## CUT BELT LACING

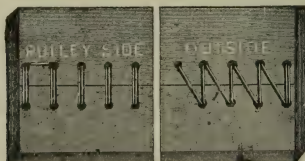


B3018

Price.....per 100 feet	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Width.....inches	1.25	1.50	1.75	2.00	2.25	3.00	3.75

This is cut from all of our grades.

## WIRE BELT LACING

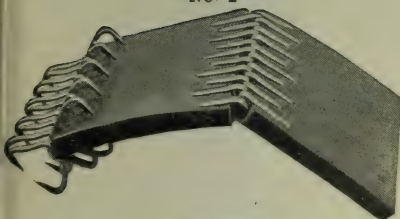


B3020

Number .....	0	1	2	3
For Belts.....inches	2 and under	$2\frac{1}{2}$ to 6	6 to 20	20 to 40
Price.....per 100 feet	2.00	2.00	2.00	2.00

# **FLEXIBLE STEEL LACING APPLIED WITH A HAMMER**

No. 2



B3022

Pinless Hinge Style

## **SIZE No. 2**

For light single leather and rubber or textile, not over  $\frac{3}{4}$  inch thick. Packed in boxes as follows:

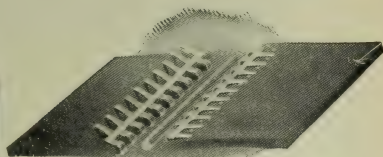
Box C—50 2-in. laces (100 inch.)	1.90
Box D—33 3-in. laces (99 inch.)..	1.75
Box E—25 4-in. laces (100 inch.)	1.75
Box B—Assorted, 10 each, 1, 2, 3 and 4-inch for 100 inches of belting .....	1.80
Box A—Assorted, 2, 3 and 4-inch lengths for 54 inches in width of belting .....	1.00

## **SIZE No. 4**

For medium double leather and rubber or textile belting, not over  $\frac{3}{8}$ -inch thick. Put up in boxes as follows:

Box P—25 4-inch laces (50 pcs.) or sufficient for 100 inches of belting.....	2.50
Box T—Assorted, 24 inches of No. 2, 14 inches No. 3, and 8 inches No. 4.....	1.00
Box O—Containing 9 4-inch laces (18 pcs.) or sufficient for 36 in. width of belting.....	1.00

No. 3



B3023

Hinge with Rawhide Pin

## **SIZE No. 3**

For heavy single and light double leather, 4 and 5 ply rubber and textile belts, not over  $\frac{3}{4}$  inch thick. Hinges on a rawhide pin, therefore separable—Prongs clinch through from both sides of the belt—Especially adapted for use on overhead belts. Put up in boxes as follows:

Box I—33 3-inch laces (66 pcs.) and 99 inches rawhide pins..	2.50
Box K—25 4-inch laces (50 pcs.) and 100 inches rawhide pins.	2.50
Box H—37 inches assorted 3-inch and 4-inch lengths with 37 inches rawhide pins.....	1.00
Box L—Contains 21 inches of No. 3, and 24 inches of No. 2, assorted 3-inch and 4-inch lengths.....	1.00

Flexible rocking joint insures perfect contact with pulley.

Can be used with an idler as both sides are alike.

No punch holes to weaken belt. 4-inch belt laced in 4 minutes.

## **COPPER RIVETS AND BURRS—B3025**

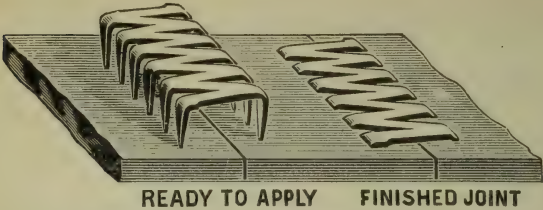
### **Price Per Pound**

No.....	3 to 7	8	9	10	11	12	13	14	15
In 1 lb. Boxes....	.49	.50	.52	.54	.56	.58	.60	.65	.70
" $\frac{1}{2}$ " " .....	.52	.53	.55	.57	.59	.61	.63	.68	.73



## **TUBULAR RIVETS—Not illustrated B3026**

Sizes,  $\frac{1}{16}$ -inch,  $\frac{1}{8}$ -inch and  $\frac{3}{16}$ -inch.....per 1000 2.00



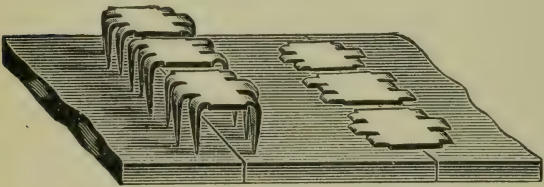
READY TO APPLY FINISHED JOINT

B3027

**BRISTOL'S  
BELT LACING**

One hundred inches in a box.

No.	Use for	Per Box
00	Split and Extra Light Belts, $\frac{1}{16}$ to $\frac{1}{8}$ inch thick.....	1.00
0	Leather Belts, $\frac{1}{8}$ to $\frac{3}{16}$ inch thick.....	1.00
1	Single " " $\frac{3}{16}$ to $\frac{1}{4}$ " ".....	1.50
2	Heavy, Wide Single Leather Belts, $\frac{1}{4}$ to $\frac{5}{16}$ inch thick.....	2.00
3	Double Leather Belts, $\frac{1}{8}$ to $\frac{3}{8}$ inch thick.....	2.50
4	Heavy Double Leather Belts, $\frac{3}{8}$ to $\frac{7}{16}$ inch thick.....	3.00
5	Extra Heavy Double Leather Belts, $\frac{7}{16}$ to $\frac{9}{16}$ inch thick.....	3.50
100	Light Rubber and Cotton Belts, $\frac{1}{16}$ to $\frac{1}{8}$ inch thick.....	1.10
10	2-ply " " " " $\frac{1}{8}$ to $\frac{3}{16}$ " ".....	1.10
11	3 " " " " $\frac{3}{16}$ to $\frac{1}{4}$ " ".....	1.65
12	4 " " " " $\frac{1}{4}$ to $\frac{5}{16}$ " ".....	2.20
13	5 " " " " $\frac{5}{16}$ to $\frac{3}{8}$ " ".....	2.75
14	6 " " " " $\frac{3}{8}$ to $\frac{7}{16}$ " ".....	3.30
15	7 and 8-ply Rubber and Cotton Belts, $\frac{7}{16}$ to $\frac{9}{16}$ inch thick.....	3.85
17	8-ply and Extra Heavy Rubber and Cotton Belts.....	4.95
19	10- " " " " Conveyor Belts.....	6.05
111	Single Leather Rubber and Cotton Belts, $\frac{3}{16}$ to $\frac{1}{4}$ inch thick.....	1.65
112	" " " " $\frac{1}{4}$ " " $\frac{5}{16}$ " ".....	2.20
113	Double " " " " $\frac{5}{16}$ " " $\frac{3}{8}$ " ".....	2.75
114	" " " " $\frac{3}{8}$ " " $\frac{7}{16}$ " ".....	3.30
115	" " " " $\frac{7}{16}$ " " $\frac{1}{2}$ " ".....	3.85

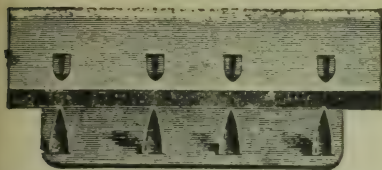


B3028

**STAR STEEL  
BELT HOOKS**

No.		Per 100
00	For Light Leather, Rubber or Cotton Belts, $\frac{1}{16}$ to $\frac{1}{8}$ -inch thick. $\frac{3}{8}$ to 3 inches wide, 200 in a box.....	.80
0	For Light Leather, Rubber or Cotton Belts, $\frac{1}{8}$ to $\frac{3}{16}$ -inch thick, $\frac{1}{2}$ to 3 inches wide, 200 in a box.....	1.00
1	For Single Leather, 3-ply Rubber or Cotton Belts, 1 to 5 inches wide, 100 in a box.....	1.20
2	For Heavy Single or Light Double Leather, 4-ply Rubber or Cotton Belts, .1 to 8 inches wide, 100 in a box.....	2.00
3	For Double Leather, 4 to 6-ply Rubber or Cotton Belts, 1 to 12 inches wide, 100 in a box.....	3.40
4	For Heavy Double Leather, 6 to 8-ply Rubber or Cotton Belts, 1 inch wide and up, 100 in a box.....	5.00
5	For Extra Heavy Double Leather, 6 to 8-ply Rubber or Cotton Belts, $1\frac{1}{2}$ inch wide and up, 100 in a box.....	9.00
6	For Extra Heavy Double Leather. Rubber or Cotton Belts, from $\frac{1}{2}$ -inch to $1\frac{1}{16}$ -inch thick, $1\frac{1}{2}$ -inch wide and up, 100 in a box.....	12.00





## STANDARD MALLEABLE FASTENERS

"Jewel, Potters or Novelty"

B3030

FOR SINGLE LEATHER BELTS			DOUBLE LEATHER BELTS			4-PLY OLD RUBBER BELTS		
No.		Per 100	No.		Per 100	No.		Per 100
1	1-in. Belts.....	1.50	8	2 in. Belts.....	5.00	18	3 in. { extra }	10.00
2	1¼-1½ in. Belts	2.00	9	2½ " " "	6.50	19	4 " { wide }	12.00
3	1½-2 " " "	2.50	10	3 " " "	7.50	5 AND 6-PLY RUBBER		
4	2¼-2½ " " "	3.00	11	3½ " " "	8.50	No.		Per 100
5	2½-3 " " "	3.50	12	4 " " "	9.50			
6	3¼-3½ " " "	4.50	3-PLY RUBBER BELTS			22	3 in. Belts.....	10.00
7	3½-4 " " "	5.50	No.		Per 100	23	4 " " "	12.00
EXTRA WIDE, FOR OLD SINGLE LEATHER BELTS						17	2½ in. Belts.....	5 00
No.		Per 100	20	3 " " "	7.00	7 AND 8-PLY RUBBER		
			21	4 " " "	8.00	No.		Per 100
4-PLY RUBBER BELTS			24	3 in. { extra }	12.00			
No.		Per 100	No.		Per 100	25	4 " { wide }	15.00
						13	2 in. Belts.....	5.00
3½	2 in. Belts.....	3.50	15	2½ " " "	6.50			
4½	2½ " " "	4.50	15	3 " " "	7.50			
5½	3 " " "	5.50	16	4 " " "	9.50			
6½	3½ " " "	6.50						
7½	4 " " "	7.50						
8½	5 " " "	9.50						

## STANDARD STEEL FASTENER

B3031

Packed 100 in Box		
SINGLE LEATHER 3-PLY		
No.		Per 100
51	For 1 in. Belts . . . . .	1.50
52	" 1½ and 3 in. Belts ....	2.00
53	" 2, 4 and 6 " " "	2.50
54	" 2½ to 5 " " "	3.00
54½	" 3 in. Belts .....	4.00

Packed 50 in Box		
DOUBLE LEATHER 4-PLY		
No.		Per 100
55	For 2, 4 and 6 in. Belts ....	5.00
56	" 2½ " 5 " " "	6.50
57	" 3 " 6 " " "	7.50
5 AND 6-PLY RUBBER		
No.		Per 100
58	For 2, 4 and 6 in. Belts ....	8.50
59	" 2½, 5 and 10 in. Belts	9.00
60	" 3, 6 " 9 " " "	10.00

## BEVELED HEAD TINNED RIVETS

B3032



Length Under Head ...inches	$\frac{5}{16}, \frac{7}{16}, \frac{9}{16}$	$\frac{5}{8}, 1, 1\frac{1}{8}$	$1\frac{1}{4}, 1\frac{1}{2}$
Price..... per gross	.60	.68	.75



## BLAKE BELT STUDS

B3033

One Hundred in a box.



Number.....	3	2	1	0	00
Price..... per box	.90	1.25	1.65	2.00	2.50

No. 3 for very thin belts, No. 2 medium leather belts, No. 1 for ordinary and single leather belts, No. 0 for light double leather belts, No. 00 for heavy double leather belts and 5 and 6 ply rubber.

## POINTED BELT HOOKS

B3035

No. ....	15	14	13	12	11	10	9	8	7	6	5	4
Per 1000...	2.00	2.40	2.60	2.80	3.00	3.50	4.00	5.00	6.00	8.50	11.00	14.00
Length...In.	$\frac{23}{32}$	$\frac{23}{32}$	$\frac{3}{4}$	$\frac{23}{32}$	$\frac{29}{32}$	$1\frac{1}{32}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{13}{32}$	$1\frac{3}{4}$	$2\frac{1}{32}$	$2\frac{19}{32}$
In Box....	250	250	250	250	250	250	250	250	250	250	250	250

No. ....	3	2	Size .....inches	2½	3	4
Per 1000.. ....	16.00	20.00	Per 1000.....	50.00	60.00	80.00
Length....inch	$2\frac{13}{32}$	$2\frac{15}{32}$	In Box.....	50	50	50
In Box.....	250	250				



## BUFFALO BELT HOOKS

B3036



		Per 1000
No. 15—1000 in box, for Light Single Belts.....		1.50
No. 13—1000 “ “ Ordinary “ “ .....		2.00
No. 10—1000 “ “ Wide “ “ .....		2.50
No. 8— 500 “ “ Light Double “ “ .....		3.50
No. 7— 250 “ “ Ordinary “ “ .....		4.00
No. 6— 250 “ “ Heavy “ “ .....		5.00

## BELT COUPLING



B3038

For Round Belts of Every Description

Size .....	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{9}{32}$	$\frac{5}{16}$	$1\frac{1}{32}$	$\frac{3}{8}$	$\frac{7}{16}$
Per dozen...	3.00	3.00	2.50	2.50	2.00	2.50	2.50	3.00	3.00	3.50
Size .....	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$1\frac{1}{16}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	
Per dozen...	4.00	5.00	6.00	7.50	9.00	13.00	18.00	22.00	26.00	

## COTTON HOSE

### RUBBER LINED GARDEN HOSE



B3050

#### PRICE PER FOOT IN 50 FOOT LENGTHS

$\frac{1}{2}$ inch (with couplings attached).....	per foot	20
$\frac{3}{4}$ " " " " .....	"	25
1 " (without couplings) .....	"	35

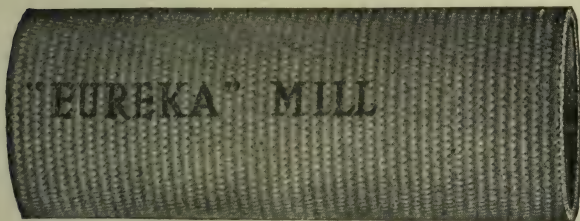
This hose can be furnished in 25 foot lengths, but in that case an extra charge is made for all couplings.

The "Eureka" Garden Hose for 400 pounds, water pressure.

The "Trojan" brand for 300 pounds.

The "Pioneer" brand for 250 pounds.

#### COTTON MILL HOSE (Rubber Lined)



B3051

#### IN 50 FOOT LENGTHS, WITHOUT COUPLINGS

Internal Diameter inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Per foot.....	35	45	50	60	65	70	1.00	1.50	2.00

Can be furnished in half lengths.

The "Eureka" Mill Hose is seamless woven and rubber-lined and mildew-proof for mill and factory fire purposes. It is a single ply hose intended for factories, warehouses, hotels, etc., where hose is kept attached to stand-pipes, fire-pumps, etc. Will stand a pressure of 350 pounds per square inch.

The "Trojan" brand same as above except lighter weight, for 300 pounds pressure.

The "Pioneer" brand somewhat lighter than "Trojan," intended for 250 pounds pressure.

## LINEN HOSE

**"EUREKA BEST" LINEN HOSE** (Unlined)

Stripe consists of four warp strands each, red, white, and blue, laid side by side in order named. Made in any length and labeled strictly in accordance with the requirements and specifications of the Associated Factory Mutual Insurance Companies and National Fire Protection Association as an unlined linen fire hose for indoor factory fire protection. Pressure, 550 pounds.

**"20TH CENTURY" LINEN HOSE** (Unlined)

Labeled strictly in accordance with the "National Fire and Protection Requirements," and acceptable to the Factory Mutuals. Pressure, 500 pounds.

**"PREMIER" LINEN HOSE** (Unlined)

Approved by the New York Board of Fire Underwriters. In any length desired. Pressure, 400 pounds.

**"TRADE" LINEN HOSE** (Unlined)

Passed by the New York Board of Fire Underwriters. Pressure, 400 pounds.

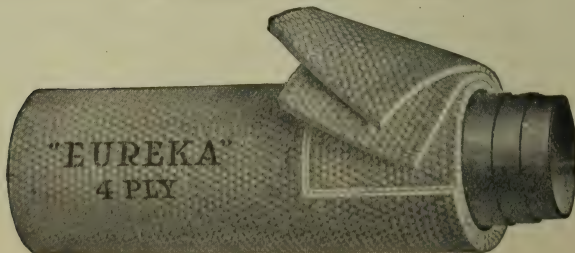
**"RED BALL" LINEN HOSE** (Unlined)

Passed by the New York Board of Fire Underwriters. Pressure, 300 pounds.

**PRICE PER FOOT WITHOUT COUPLINGS—B3053**

Internal Diameter.....inches	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3
Eureka Best.....per ft.	24	27	30	33	..	42	46	50	65
20th Century....."	22	24	27	30	32	34	37	40	55
Premier....."	18	20	22	25	28	30	33	35	50
Trade....."	18	20	22	25	28	30	33	35	50
Red Ball....."	18	20	22	25	28	30	33	35	50
Rubber Lined Linen....."	30	35	45	50	..	60	65	70	1.00

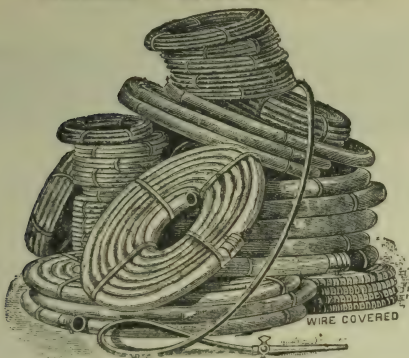
## FIRE DEPARTMENT HOSE



B3054

Cotton, Rubber Lined, quoted on application.

## RUBBER WATER HOSE



B3060

Size.... inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	4
2-ply...per foot	.20	.25	.33	.42	.50	.58	.66	.75	.83	.92	....	....
3- " " "	.25	.30	.40	.50	.60	.70	.80	.90	1.00	1.10	1.20	1.60
4- " " "	.30	.37	.50	.62	.75	.87	1.00	1.12	1.25	1.37	1.50	2.00
5- " " "	.37	.46	.62	.77	.93	1.08	1.25	1.40	1.56	1.71	1.87	2.50
6- " " "	.45	.55	.75	.93	1.12	1.30	1.50	1.68	1.87	2.05	2.25	3.00

In ordering hose please state if for high, medium, or low pressure, or if for drainage purposes.

## RUBBER GARDEN HOSE

The  $\frac{1}{2}$ -inch,  $\frac{5}{8}$ -inch and  $\frac{3}{4}$ -inch Garden Hose kept in stock in 50 foot and 25 foot lengths, with couplings attached. **Couplings extra on 25 ft. lengths.**

Size .....	inches	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
2-ply.....per foot cpld.		.20	.23	.25
3- " .....	"	.25	.28	.30
4- " .....	"	.30	.34	.37
5- " .....	"	.37	.42	.46
6- " .....	"	.45	.50	.55
7- " .....	"	.55	.60	.65

Rubber Garden Hose can be furnished in 500 foot length.

When ordering hose it is a good idea to state for what purpose it is to be used, and about what pressure it will be used on. Where pressure is liable to run over 40 pounds per square inch, it is advisable to buy 4-ply hose, or the (light) 6 or 7-ply. The duck, known as sheathing, in the five, six and seven-ply hose is lighter than in the regular two, three and four-ply, the five-ply corresponding with regular three-ply, and the six-ply corresponds with regular four-ply in strength. The quality of the duck and rubber in hose has more to do with the durability of the hose than the weight of the material or number of plys. A really high-grade hose costs two or three times what the ordinary grades do. Every one knows that pure rubber is a high-priced article.



PERFECTED HOSE



B3065

Water Hose, list B3050; Fire Hose, Steam Hose, list B3070; Hot Water Washout Hose, list B3066; Brewers' Hose, list B3070; Acid Hose, list B3067; Air Drill Hose, list B3070; also Air Brake Hose, Hose and Tubing for Pneumatic Tools (Steam list) can all be furnished in the first grade of the Perfected construction. The Perfected construction used in first grade only.

The Perfected construction increases the life of hose, as it reduces kinking, expansion, and elongation.

It combines the best qualities of cotton hose and rubber hose. Impossible to injure it by mildew or dampness.

Guaranteed to be the best in the world.

PERFECTED HOT WATER WASHOUT HOSE—B3066

Especially Adapted for Packing House use.

It will conduct hot water and steam up to 20 pounds pressure. The outer cover or jacket is composed of the same compound as the inner tube.

It will not harden with heat, from the fire box or the steam and water it is conducting.

Made in any length up to 50 feet.

Inside Diameter.....inches	1	1¼	1½	1¾	2	2¼	2½
4-Ply .....	.67	.85	1.02	1.18	1.34	.....	.....
5 " .....	.83	1.04	1.25	1.45	1.66	1.87	2.08
6 " .....	1.03	1.30	1.56	1.81	2.07	2.33	2.60
7 " .....	1.24	1.56	1.87	2.17	2.49	2.80	3.12
8 " .....	1.45	1.82	2.18	2.53	2.90	3.27	3.64

ACID HOSE—B3067

Four-Ply, Regular (not Perfected) Construction

Inside Diam...inches	¾	1	1¼	1½	2	2¼	2½	3	3½	4
½ inch Lining.....	.75	1.00	1.15	1.30	1.55	1.70	1.85	2.25	2.75	3.25
¾ " " .....	.90	1.15	1.35	1.55	1.85	2.10	2.30	2.75	3.25	3.75
1 " " .....	1.10	1.35	1.55	1.80	2.25	2.50	2.75	3.25	3.75	4.25

5 or 6-Ply made at additional cost of 25% for each added ply.

VACUUM, STEAM, AND PRESSURE HOSE

Corrugated Surface



B3068

STRAIGHT. PRICE PER FOOT

Size In.	Vacuum 2-Ply	Steam 3-Ply	Pressure 4-Ply	Pressure 5-Ply	Pressure 6-Ply	Size In.	Vacuum 2-Ply	Steam 3-Ply	Pressure 4-Ply	Pressure 5-Ply	Pressure 6-Ply
1	1.20	1.40	1.60	2.00	2.40	2	1.70	2.25	2.50	3.13	3.75
1¼	1.30	1.60	1.80	2.25	2.70	2¼	1.90	2.50	2.80	3.50	4.20
1½	1.40	1.80	2.00	2.50	3.00	2½	2.10	2.75	3.10	3.88	4.65
1¾	1.50	2.00	2.20	2.75	3.30	...	.....	.....	.....	.....	.....

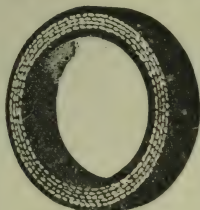
ANACONDA STEAM HOSE—B3069

Corrugated Surface. Wire Inserted

Use same list as regular 5-ply Steam Hose.

Specially for blowing out tubes in high-pressure boilers. Will withstand great pressure and heat, and will retain its elasticity.

# STEAM HOSE



B3070

Price list also applies to Air, Air Drill, Brewers', Car Heating, Oil, Pneumatic Signal, Steam, Steam Drill, Tanners', and Wine Hose.

Size.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$
3-ply.....per foot	.35	.43	.51	.67	.85	1.02	1.18	1.34	1.50	1.66
4-....."	.43	.51	.67	.83	1.04	1.25	1.45	1.66	1.87	2.08
5-....."	.51	.63	.83	1.03	1.30	1.56	1.81	2.07	2.33	2.60
6-....."	.63	.76	1.00	1.24	1.56	1.87	2.17	2.49	2.80	3.12
7-....."	.....	.89	1.17	1.45	1.82	2.18	2.53	2.90	3.27	3.64
8-....."	.....	1.02	1.34	1.66	2.08	2.50	2.90	3.32	3.74	4.16

For Marline, Wire Wrapped or Armoured Hose, see B3090, etc.

For Couplings, see B3112.

## STEAM HOSE

Steam Hose is vulcanized at a temperature of about 250 degrees, while to vulcanize combs, knife handles, and other articles of hard rubber only about 300 degrees are required. It must be clear to you therefore that at a pressure on the hose of, say, 70 lbs., which generates a heat of 316 degrees, the wear and tear on the hose is most severe. Under the most favorable conditions, the life of steam hose cannot be very long, owing to the great heat to which it is subjected in service, the great pressure applied, and the frequency with which it is used.

The user should keep in mind that steam hose is not iron pipe, that there is a limit to its endurance, and that the higher the heat the sooner comes deterioration.

There are several different grades of hose and consequently various prices, low, medium, and high. Cheap hose, especially steam hose, is expensive in the long run. The best, although much higher, often more than double the price of cheap hose, is of course the best for service, but there are medium grades that often give very satisfactory service.

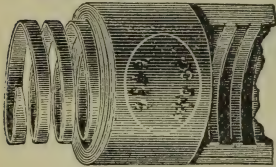
Temperature of steam at different pounds steam gauge pressure and ply of hose recommended.

30 pounds 250°	40 pounds 267°	50 pounds 280°	60 pounds 292°
4 Ply for $\frac{1}{2}$ in.	4 Ply for $\frac{1}{2}$ in.	4 Ply for $\frac{1}{2}$ in.	4 Ply for $\frac{1}{2}$ in.
4 " " $\frac{3}{4}$ "	4 " " $\frac{3}{4}$ "	4 " " $\frac{3}{4}$ "	5 " " $\frac{3}{4}$ "
4 " " 1 "	4 " " 1 "	5 " " 1 "	6 " " 1 "
4 " " 1 $\frac{1}{4}$ "	4 " " 1 $\frac{1}{4}$ "	5 " " 1 $\frac{1}{4}$ "	6 " " 1 $\frac{1}{4}$ "
4 " " 1 $\frac{1}{2}$ "	5 " " 1 $\frac{1}{2}$ "	5 " " 1 $\frac{1}{2}$ "	6 " " 1 $\frac{1}{2}$ "
5 " " 2 "	6 " " 2 "	8 " " 2 "	8 " " 2 "
70 pounds 302°	80 pounds 311°	90 pounds 320°	100 pounds 327°
5 Ply for $\frac{1}{2}$ in.	6 Ply for $\frac{1}{2}$ in.	6 Ply for $\frac{1}{2}$ in.	8 Ply for $\frac{1}{2}$ in.
6 " " $\frac{3}{4}$ "	6 " " $\frac{3}{4}$ "	6 " " $\frac{3}{4}$ "	8 " " $\frac{3}{4}$ "
7 " " 1 "	8 " " 1 "	8 " " 1 "	10 " " 1 "
7 " " 1 $\frac{1}{4}$ "	8 " " 1 $\frac{1}{4}$ "	9 " " 1 $\frac{1}{4}$ "	10 " " 1 $\frac{1}{4}$ "
8 " " 1 $\frac{1}{2}$ "	9 " " 1 $\frac{1}{2}$ "	10 " " 1 $\frac{1}{2}$ "	10 " " 1 $\frac{1}{2}$ "
10 " " 2 "	10 " " 2 "	.....	.....

Lighter hose may be used but the heat will, of course, sooner burn away the lighter wall.

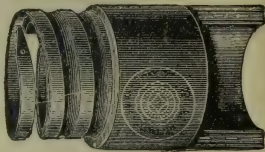
LARGE SUCTION HOSE

ROUGH BORE ON FLAT  
SPIRAL SPRING WIRE



B3075

SMOOTH BORE ON FLAT  
SPIRAL SPRING WIRE

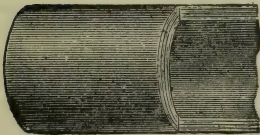


B3076

Internal Diameter.....inches	2	2½	3	3½	4	4½
Rough Bore.....per foot	.....	3 10	4.00	4.90	5.80	6.70
Smooth "....."	2.60	3.50	4 50	5.50	6.50	7.50
Internal Diameter.....inches	5	6	7	8	10	12
Rough Bore.....per foot	7.60	9.50	12.00	15.00	20.00	25.00
Smooth "....."	8.50	10.50	13.50	16.50	22.50	27.50

Can furnish 5½ in., 6½ in., 7½ in., and 9 in. at proportionate price.  
Made to order in any length up to 50 feet, and with enlarged ends if desired.  
For Suction Hose Nipples see list bottom of page.

HARD RUBBER  
SUCTION HOSE

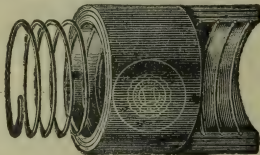


B3077

4 Ply made in 50-ft. lengths.

Diam. In.	¾	1	1¼	1½
Per ft.	.65	.75	.93	1.13

AGRICULTURAL WIRE  
LINED SUCTION HOSE



3078

Round Smooth Bore or Flat Wire Rough Bore Hose. Intended for Threshermens' Tank Pumps, etc. 2-Inch in 15-ft., 20-ft. and 25-ft. lengths, with enlarged ends, per ft., \$1.00.

Is also made with Canvas Woven Jacket if desired.

AGRICULTURAL HARD RUBBER SUCTION HOSE

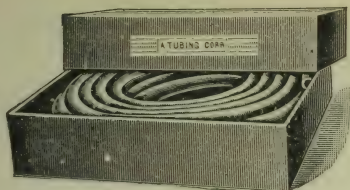
2-inch with Enlarged Ends for Threshermen Tank Pump, 15-foot, 20-foot, and 25-foot lengths, per foot, \$2.00.

CANVAS COVERED HOSE, SPECIAL

SUCTION HOSE NIPPLES—(Iron) B3079

Size	Total Length	Price, Each	For Wiring in Each	Size	Total Length	Price, Each	For Wiring in Each
2 in.	7 in.	.60	1.70	5 in.	12 in.	3.60	2.75
2½ "	7 "	.90	1.80	6 "	14 "	5.00	3.75
3 "	8 "	1.25	1.90	7 "	16 "	7.25	4.25
3½ "	10 "	1.75	2.20	8 "	16 "	8.75	4.75
4 "	10 "	2.00	2.50	10 "	20 "	16.25	5.75
4½ "	12 "	3.00	2.60	12 "	20 "	25.00	6.50

RUBBER



TUBING

B3080

Made Smooth or Corrugated in White, also Smooth in Red.

Int. Diameter .....inches	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per Foot.....	.08	.12	.16	.18	.20	.25	.30	.35	.45

Made with  $\frac{1}{32}$  and  $\frac{1}{16}$  inch, also  $\frac{3}{32}$  inch wall. For gas and air.

### CLOTH INSERTION, BEER PUMP, AND FIRE EXTINGUISHER TUBINGS—B3085

Int. Diameter .....inches	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per Foot.....	.10	.14	.18	.20	.23	.28	.33	.38	.50

Acid Tubing, B3088. Extra quality, \$2.50 per pound.

### PERFECTED TUBING—For Pneumatic Tools

Particular attention is called to the excellent quality of our Tubing and Hose for Pneumatic Tools and Pneumatic Equipment of all kinds. The inner tube is made of a special compound to withstand the action of oil and water, more or less of which is carried through the pipes from the air compressor.

This tubing is also made plain with Cloth Insertion.

Int. Diameter	4-Ply	5-Ply	6-Ply
$\frac{1}{4}$ inch	.35	.43	.51
$\frac{3}{8}$ "	.43	.51	.63
$\frac{1}{2}$ "	.51	.63	.76
$\frac{3}{4}$ "	.67	.83	1.00

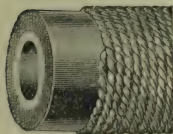
### MARLINE WINDING OR WIRE WINDING

MARLINE

ROUND WIRE

FLAT WIRE

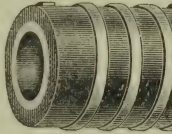
BRAIDED JACKET



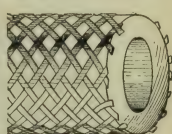
B3090



B3091



B3092



B3093

Extra per Foot for Marline or Wire Winding	Hose..inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$
3 Ply.....	.09	.11	.13	.15	.18	.20	.23	.25	.27	.27
4 ".....	.10	.12	.14	.16	.19	.21	.24	.26	.28	.28
5 ".....	.11	.13	.15	.17	.20	.22	.25	.27	.29	.29
6 ".....	.12	.14	.16	.18	.21	.23	.26	.28	.30	.30

Extra per Foot for Wire Braiding	Hose .....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
3-Ply.....	.09	.14	.18	.22	.26	.29	.37	
4 ".....	.11	.19	.24	.29	.34	.38	.49	
5 ".....	.14	.24	.30	.36	.42	.48	.61	
6 ".....	.16	.28	.36	.43	.51	.57	.74	

For Covering Hose with Canvas or Frictioned Duck, price of one extra ply is added to list price of hose.



HOSE PIPE WITH SCREW TIP

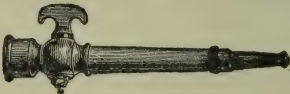


B3100

Size..... inches	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Length..... inches	6	7 $\frac{1}{2}$	12	8 $\frac{1}{2}$	12 $\frac{1}{2}$	12	15	13	15
Hose Thread.....per dozen	7.00	8.00	10.00	10.00	12.00	20.00	24.00	25.00	30.00
Iron Pipe Thread.. "	8.00	9.20	11.20	11.20	13.20	21.20	25.00	27.50	32.50

Size..... inches	2	2	2	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	....
Length..... inches	12	15	20	15	20	24	30	36	....
Hose Thread.....per dozen	38.00	45.00	50.00	75.00	96.00	100.00	144.00	157.00	....
Iron Pipe Thread.. "	41.00	48.00	53.00	78.50	99.50	103.50	150.00	163.00	....

HOSE PIPE WITH COCK



B3101

Size..... inches	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	2 $\frac{1}{2}$
Length..... "	6 $\frac{3}{4}$	8	12	8	12	12	12	12	20	24
Hose Thread, per doz.	11.00	13.00	18.00	15.00	20.00	40.00	55.00	80.00	160.00	175.00
Iron Pipe .. "	12.20	14.20	19.20	18.00	23.00	43.00	60.00	83.00	170.00	185.00

PLAIN HOSE PIPES

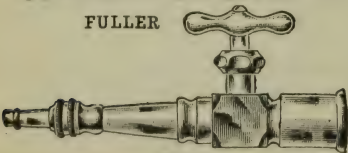


B3102

Size..... inches	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2	2 $\frac{1}{2}$	2 $\frac{1}{2}$
Length..... "	3	4	4 $\frac{3}{4}$	5 $\frac{3}{4}$	6 $\frac{3}{4}$	12	7 $\frac{1}{2}$	12
Hose Thread.....per dozen	4.00	5.00	12.00	18.00	26.00	34.00	37.40	55.00
Iron Pipe Thread .. "	5.00	6.25	13.75	19.75	29.00	39.00	39.50	60.00

COMBINATION SPRAY AND SOLID STREAM NOZZLES

FULLER



B3104

GEM



B3105

Size..... inches	$\frac{3}{4}$	1	Size..... inches	$\frac{3}{4}$	1
Price .....	per dozen	18.00 30.00	Price.....	per dozen	10.00 15.00

B3106

Size .....	inches	2	2½	2½	2½
Length.....	"	20	24	30	36
Wound and Painted .....	each	9.00	11.00	12.00	15.00
Plain Brass.....	"	7.50	9.50	11.00	13.50
Wound and Painted, without Handles.....	"	6.50	8.50	10.00	12.50
Rubber Tube, Swivel Handles .....	"	.....	.....	15.00	18.00
Leather .....	"	.....	.....	.....	18.00

B3110

Size .....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Hose Thread.....per doz.	2.40	2.40	4.40	10 00	14.00	24.00	48.00
Iron Pipe Thread....."	2.65	2.65	4.65	10 50	15.00	26.00	50.00
Female Half, Hose Thread	1.80	1.80	3.00	7.20	9.60	16.20	31.80
" " Pipe "	1.80	1.80	3.25	7.80	10.80	17.40	32.80

Couplings, doz., 3 in., \$75.00; Iron Pipe Thread, 3 in., \$76.00; 3½ in., \$120.00; 4 in., \$150.00, etc.

B3112

Size.....inches	$\frac{1}{8}$	$\frac{3}{8}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$
Hose Thread.....per doz.	15.00	15.00	18.00	24.00	30.00	42.00	72.00
Iron Pipe Thread....."	15.50	15.50	19.00	25.50	32.00	44.00	75.00
Female Half, Hose Thread	10.00	10.00	12.00	16.00	20.00	28.00	48.00
" " Pipe "	10.35	10.35	12.75	17.00	21.50	30.00	50.00

B3114

Size ..... inches	1	1½	1¾	2	2½ Light	2½ Medium	2½ Extra Heavy
Price ..... per set	1.50	1.75	2.00	2.50	3.00	3.00	3.00



B3121

### SHERMAN STAMPED BRASS HOSE CLAMP

Size.....inches	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$
Hose.....ply	2	3	4	2	3	4
Price.....per dozen	.60	.60	.60	.60	.60	.60
Inside Diam., Open.....inches	$\frac{7}{8}$	$\frac{15}{16}$	$1\frac{1}{32}$	$1\frac{3}{32}$	$1\frac{3}{16}$	$1\frac{1}{4}$

Size.....inches	1	1	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	2	2	$2\frac{1}{2}$	$2\frac{1}{2}$
Hose.....ply	3	4	3	4	3	4	3	4	3	4
Price.....per doz.	2.00	2.00	2.50	2.50	3.00	3.00	4.00	4.00	7.00	7.00
Inside Diam., Open..inches	$1\frac{7}{16}$	$1\frac{17}{32}$	$1\frac{21}{32}$	$1\frac{13}{16}$	$1\frac{15}{16}$	$2\frac{1}{16}$	$2\frac{9}{16}$	$2\frac{9}{16}$	$3\frac{1}{16}$	$3\frac{1}{16}$

### SHERMAN STEAM HOSE CLAMPS

Size.....inches	$\frac{3}{4}$	$\frac{3}{4}$	1	1	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	2	2
Hose.....ply	3	4	3	4	3	4	3-4	5	3	4
Price.....per doz.	2.00	2.00	2.50	2.50	3.00	3.00	3.50	4.00	5.50	5.50
Diam. Open, inches	$1\frac{7}{16}$	$1\frac{17}{32}$	$1\frac{5}{8}$	$1\frac{13}{16}$	$1\frac{15}{16}$	$1\frac{13}{16}$	$2\frac{7}{32}$	$2\frac{13}{32}$	$2\frac{11}{16}$	....



B3122

### BRASS HOSE CLAMPS



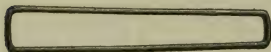
B3123

Quoted on application.

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Price, Single.....per doz.	1.50	1.50	2.00	2.50	3.00	4.00	7.00	10.00

### CALDWELL HOSE STRAP

### HOSE STRAP FASTENER



B3124



B3125

### CALDWELL HOSE STRAPS

Hose.....inches	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$
Length....."	$3\frac{3}{8}$	$3\frac{3}{4}$	$4\frac{1}{8}$	$4\frac{1}{2}$	5	$5\frac{3}{8}$	6	$6\frac{3}{8}$	$6\frac{3}{4}$	$7\frac{1}{8}$
Price.....per doz.	.40	.40	.60	.60	.80	.80	1.00	1.00	1.20	1.20

### HOSE STRAP FASTENERS

Size.....inches	$\frac{1}{2}$ to 1	$1\frac{1}{4}$ to $1\frac{1}{2}$
Price.....each	.50	.75

# HOSE MENDERS

BRASS

IRON

WOOD



B3126



B3127



B3128

Size Hose.....inch	$\frac{1}{2}$	$\frac{3}{4}$	1
Brass.....per dozen	1.20	1.20	.....
Iron....."	.....	1.00	1.50
Wood....."	.50	.50	.....

## SHERMAN MENDER CLAMP



B3129

Size Hose.....inch	$\frac{1}{2}$	$\frac{3}{4}$
Per Dozen.....	2.40	2.40

MALE

MALE AND FEMALE



B3130

## HOSE NIPPLES



B3131

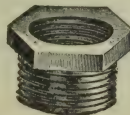
Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Male.....per dozen	3.50	3.50	5.00	9.00	10.00	14.00	28.00	40.00	50.00	75.00
Male & Female ..	3.50	3.50	5.00	9.00	10.00	14.00	28.00	40.00	50.00	75.00

## HOSE REDUCERS

## HOSE BUSHINGS



B3132

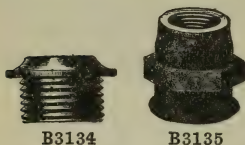


B3133

Size.....inches	$1 \times \frac{3}{4}$	$1\frac{1}{4} \times \frac{3}{4}$	$1\frac{1}{4} \times 1$	$1\frac{1}{2} \times 1\frac{1}{4}$	$2 \times 1\frac{1}{2}$	$2\frac{1}{2} \times \frac{3}{4}$	$2\frac{1}{2} \times 1$
Price, Hose Reducers, per doz.	6.50	8.00	10.00	12.00	18.00	20.00	22.00
Price, Hose Bushings, per doz.	6.50						



## HOSE APPLIANCES

BIBB END  
GOOSE NECK  
SCREW

B3134

B3135

SPANNER



B3136

SPRINKLER



B3137

## BIBB ENDS AND GOOSE NECK SCREWS

Size.....inches	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Hose Bibb Ends... per dozen	2.50	2.50	2.50	3.50	6.00	8.00	15.00
Goose Neck Screws .....	...	....	5.00	...	....	....	....

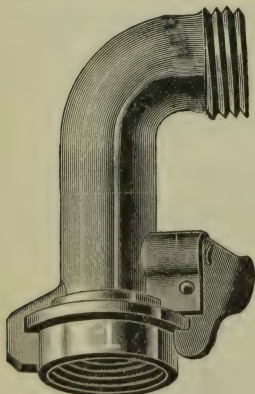
## HOSE SPANNERS, MALLEABLE IRON—B3136

Size.....inches	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Price.....each	.12	.15	.20	.25

## SPRINKLERS—B3137

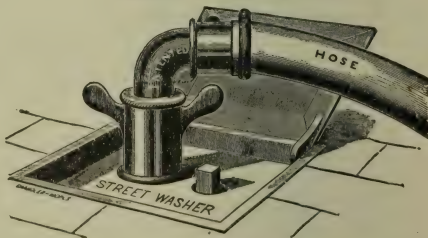
Diameter.....inches	2	$2\frac{1}{4}$	$2\frac{1}{2}$	3
Size Thread.....inches	$\frac{3}{4}$	$\frac{3}{4}$	1	$1\frac{1}{4}$
Price.....per dozen	4.50	5.25	6.00	9.00

## SMITH HOSE SWIVEL No. 1



B3140

## STRONG HOSE SWIVEL



B3141

No. 1.....per doz.	7.00	$\frac{3}{4}$ -inch.....each	1.00
" 2 (45° Bend)....."	7.00	1....."	1.80
		$1\frac{1}{4}$ ....."	3.65
		$1\frac{1}{2}$ ....."	5.80

# HOSE FITTINGS, ETC.

HOSE CAP



B3142

FIRE HOSE REDUCER



B3143

Prices on application.

## HOSE CAPS

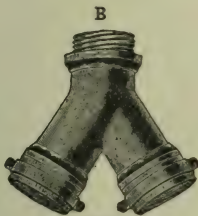
Size.....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Hose Caps....each	.35	.50	.70	.90	1.25	2.00	2.60	3.25	3.60

## SIAMESE CONNECTIONS

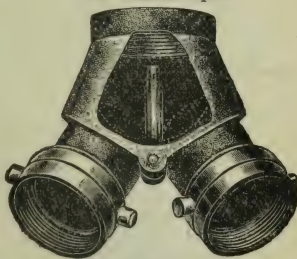
For Stand Pipes



B3144



B3145



B3146

A Two $2\frac{1}{2}$ Male, One $2\frac{1}{2}$ Female Loose Coup- ling. Price, Each	B One $2\frac{1}{2}$ Male, Two $2\frac{1}{2}$ Female Loose Coup- ling. Price, Each	Size, Iron Pipe....inches	3	4
10.00	13.00	Size, Both Nozzles, inches	$2\frac{1}{2}$	$2\frac{1}{2}$
		Price.....	15.00	30.00

## MAYFLOWER

## LAWN SPRINKLERS

## ALL RIGHT



B3150

Per Dozen, \$20.00.



B3151

Per Dozen, \$4.00.

## Four ft. Tall Sprinklers, B3152

Similar to B3150, with iron feet, 4 Arm. each \$8.00. 8 Arm, each \$10.00. With Basket and Ball, add \$4.00.



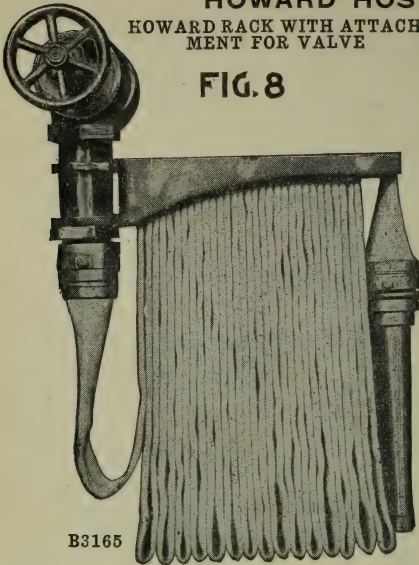




## HOWARD HOSE RACK

HOWARD RACK WITH ATTACHMENT FOR VALVE

FIG. 8



B3165

Fig. 8 has attachment for valve as shown. Fig. 5 has clamp for pipe, (like on B3166). Fig. 4 has plate or bracket to screw onto wall.

Price does not include valve.

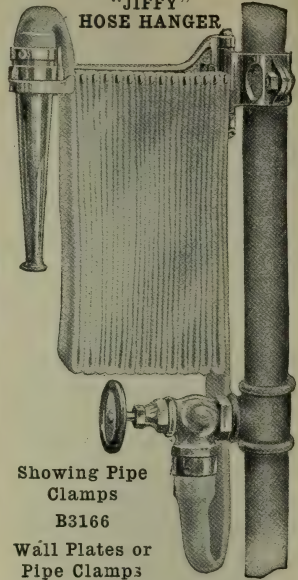
Style or Finish	No.1	No.2	No.3
Japanned Red.....	5.00	6.00	7.00
Bronzed in Aluminum....	5.00	6.00	7.00
" " Gold.....	5.00	6.00	7.00
Enameled White.....	6.00	7.00	8.00
Nickel Plate on Iron.....	7.00	8.00	9.00
" " Brass.....	11.00	13.00	15.00
Solid Brass Polished.....	10.00	12.00	14.00
" Aluminum Polished.....	10.00	12.00	14.00
Oxidized on Iron.....	7.00	8.00	9.00
" " Brass.....	11.00	13.00	15.00

Price Fig. 8 includes iron nipples. When brass nipples with collars are wanted, cost will be 1½-inch, \$1.00; 2-inch, \$1.25; 2½-inch, \$1.50 each net extra.

The hose is easily pulled from the rack by anyone, without any drilling, and without any possibility of the hose becoming tangled. This is rendered possible by shedding of the pins from the rack in the removal of the hose. Can furnish with **Iron permanent Swinging Pins**. Almost any length of hose can be placed on this rack; the length of the loop is simply a matter of taste. However, Figs. 4, 5, and 8 are intended, No. 1 for 50 feet unlined hose; No. 2 for 100 feet unlined or 50 feet of rubber lined hose; No. 3 for 150 feet of unlined or 100 feet of rubber lined hose. These racks are made to conform to the different sizes of hose. When ordering state kind, size, and length of hose to be placed on each rack.

Figure 8 illustrates latest improvement, and is adapted for use where the stand-pipe is invisible. For this construction an angle valve with female outlet is screwed close up against the wall; the outlet-pipe on which the rack turns is made of galvanized iron, and a collar screwed on the lower end supports the rack.

"JIFFY"  
HOSE HANGER



Showing Pipe  
Clamps

B3166

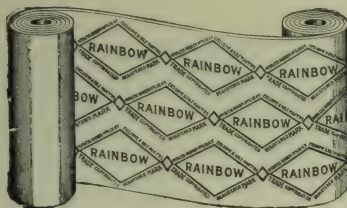
Wall Plates or  
Pipe Clamps

A very ornamental hose hanger, the Jiffy is as quick as a wink in action. State if you require wall plates or pipe clamps. Valve is extra.

	No.1	No.2	No.3	No.4
Capacity Unlined Hose, ft.	50	75	100	125
Galvanized .....	5.50	6.50	7.50	8.00
Japanned Red....	5.00	6.00	7.00	8.00
Enameled White....	5.50	6.50	7.50	8.00
Aluminum Bronze	5.00	6.00	7.00	8.00
Brass Plated.....	8.00	9.00	10.00	11.00
Nickel Plated ...	8.00	9.00	10.00	11.00
*Nickel Plated....	16.00	18.00	20.00	22.00
*Polished .....	14.00	16.00	18.00	20.00
*Rough .....	12.00	14.00	16.00	18.00

\*The last three styles are of solid brass; balance are of cast-iron.

# RAINBOW SHEET PACKING



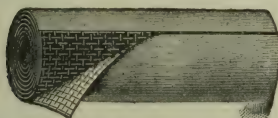
B3200

Price per pound, \$1.00.

Standard width one yard, in rolls of about 200 pounds each.

Thickness .....	inch	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Approximate weight per square yard.....	lbs.	3 $\frac{1}{2}$	6 $\frac{1}{2}$	10	14	20	30	40	60

# RAINBOW SHEET PACKING WITH BRASS WIRE INSERTION



B3202

Price per pound, \$1.50.

Standard width 36 inch, any width made to order.

Thickness.....	inch	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$
----------------	------	----------------	----------------	----------------	---------------	----------------	---------------

Approximate weight per square yard, slightly heavier than plain Rainbow Packing.



# WIZARD SUPERHEAT AND HIGH PRESSURE STEAM PACKING

Thickness  $\frac{1}{32}$ ,  $\frac{1}{16}$ ,  $\frac{3}{32}$ , and  $\frac{1}{8}$ -inch, weights approximately the same as Rainbow Packing.

Price per pound, \$1.50.

This packing is especially adapted for making very high pressure and superheat steam joints.

It is a combination of asbestos copper fibre and other heat-resisting substances, chemically treated in such a manner that at about 250 lbs. steam pressure it becomes practically one with the flange, and yet the joint can be broken and the Wizard replaced many times.

B3203

## JENKINS '96 PACKING



B3205

Price.....per pound, \$0.80

Jenkins '96 is an unvulcanized sheet rubber packing, having many valuable characteristics which render it an ideal joint packing.

Thicknesses.....inches	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$
Approximate weight per square yard...pounds	2 $\frac{3}{4}$	5 $\frac{1}{2}$	8 $\frac{3}{4}$	11	16 $\frac{1}{2}$	22 $\frac{1}{2}$

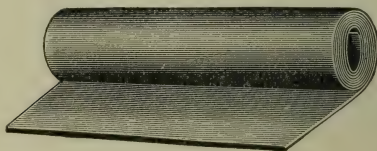
It is regularly made 36 inches wide. Special widths to order. It is also made with wire insertion, for which net prices will be furnished on application.

To make a thicker gasket, two layers of thin packing can be used as the heat soon vulcanizes it into one solid gasket.

## BLACK SHEET PACKING

EBONITE

Per Pound, \$1.00



N. B. O.

Per Pound, \$1.00

B3206

Thickness and weights approximately same as table at top of page.

## VANDA SHEET PACKING

B3208

VANDA BLACK

B3209

VANDA BROWN

Per Pound.....\$1.25

Per Pound.....\$0.65

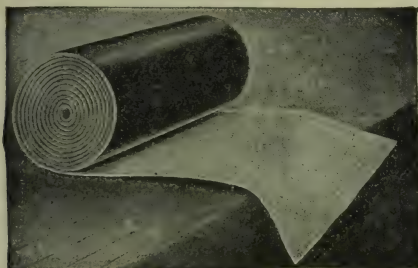
For extreme high pressure and high temperature — a packing for the hard places — one that won't have to be followed up.

Far better than any rubber packing, but not calculated to stand up and do the extreme work of Vanda Black.

Thickness.....inch	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$
Approximate weight per square yd., Black.....lbs.	2 $\frac{1}{2}$	5	7 $\frac{1}{2}$	10
“ “ “ “ “ Brown..... “	3 $\frac{1}{2}$	7	10 $\frac{1}{2}$	14

# **"MOBILENE" SHEET PACKING**

**FOR GAS AND GASOLINE ENGINE CYLINDER HEADS**



**B3210**

Price.....per pound, \$1.50

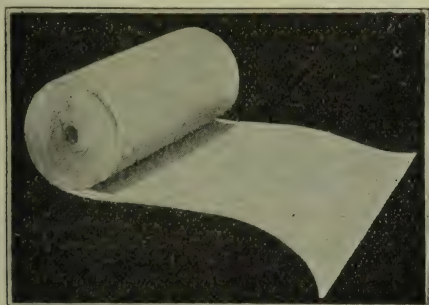
The peculiar conditions of gas and gasoline engine work have proved that ordinary organic packings are totally unreliable for this purpose.

Furnished in rolls, 250 lbs. each, weight per square yard  $4\frac{1}{2}$  lbs., 40 inches wide, standard thickness  $\frac{1}{32}$  inch; other thicknesses if desired.

# **"KEARSARGE"**

**ASBESTO-METALLIC SHEET PACKING**

**For High Pressure Steam and Gasoline Engine Heads**



**B3211**

Price.....per pound, \$1.00

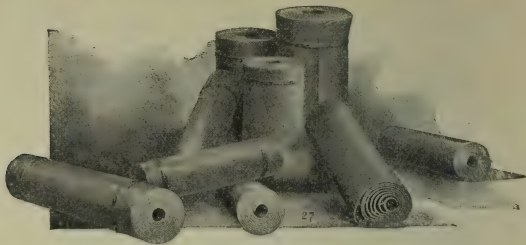
"Kearsarge" Asbesto Metallic Sheet Packing is made from asbestos yarn and strands of fine brass wire, firmly twisted and woven together, and coated with special heat resisting composition. Furnished in rolls, 40 inches wide, 250 lbs. each.

Approximate Thickness.....inch	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$
Weight per square yard.....pounds	$4\frac{1}{2}$	5	10	18

Standard Stock sizes are  $\frac{1}{16}$  and  $\frac{1}{8}$  inch.



SHEET RUBBER PACKING



B3215

Made with Rubber both sides, or Cloth both sides, in rolls of about 200 pounds, 36 inches wide. Each thickness of cloth, whether inside or out, counts as one ply.

Thickness .....	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{8}$
One Yard Wide ....	2 Ply	2 Ply	3 Ply	3 Ply	4 Ply	4 Ply	4 Ply
Price .....per pound	.65	.63	.61	.58	.58	.55	.55
Approximate Weight per Yard .....	3	5½	7	11½	17½	23	35

PURE SHEET GUM. B3216

Sheet.  $\frac{1}{32}$ ,  $\frac{1}{16}$ ,  $\frac{3}{32}$ ,  $\frac{1}{8}$ ,  $\frac{3}{16}$ ,  $\frac{1}{4}$ , and  $\frac{1}{2}$  inch thick, 36" wide. Per pound, \$1.00. Approximate weight, 4, 8, 12, 16, 20, 24, and 48 pounds per yard.

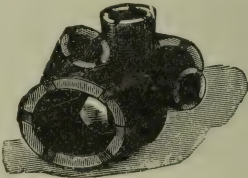
DIAPHRAGM SHEET PACKING. B3217

Insertion is of duck with high grade rubber, 36" wide. Per pound, \$1.50. Specify whether high or low pressure is wanted. Also whether for Steam or for Gas Regulator, and if possible what make of regulator.

RAINBOW  
GASKETS  
AND RINGS

To Order

B3218



CLOTH  
INSERTION  
RUBBER  
GASKETS

To Order

B3219

Any size and thickness made to order on short notice.

Rainbow Plain		Rainbow Wire Inserted		Rubber Cloth Insertion or Cloth Both Sides	
Thickness Inch	Price Per Lb.	Thickness Inch	Price Per Lb.	Thickness	Price Per Lb.
$\frac{1}{32}$	1.40	$\frac{1}{16}$	2.50	$\frac{1}{8}$ inch and less	1.00
$\frac{1}{16}$	1.30	$\frac{3}{32}$ to $\frac{1}{4}$	2.00	$\frac{3}{16}$ " " greater	.70
$\frac{3}{16}$ to $\frac{1}{4}$	1.10	.....	.....	.....	.....

RAINBOW RINGS FOR UNIONS, ICE MACHINES, PUMPS, ETC. B3220

Internal Diameter	$\frac{1}{32}$ and $\frac{1}{16}$	$\frac{3}{32}$ and $\frac{1}{8}$	$\frac{1}{4}$ and $\frac{1}{2}$
1 in. and smaller .....per lb.	3.00	2.50	2.20
1 to 2 in..... "	2.50	2.00	1.70
2 " 3 "..... "	2.00	1.50	1.20

# THE ECLIPSE SECTIONAL RAINBOW GASKET



Handhole  
Packing



Manhole  
Packing

B3225

Price,  $\frac{3}{8}$  inch and larger, per lb., \$1.00.  $\frac{1}{4}$  inch per lb., \$2.00.

## LENGTH AND WEIGHT PER BOX

$\frac{1}{4}$ in. diameter	50 ft.	1 $\frac{1}{2}$ lbs.	.....	.....	.....
$\frac{3}{8}$ " "	36 "	2 $\frac{3}{4}$ "	$\frac{5}{8}$ in. diameter	24 ft.	6 lbs.
$\frac{1}{2}$ " "	36 "	5 $\frac{1}{4}$ "	$\frac{3}{4}$ " "	18 ft.	6 "

Rain-Besto  
Combination



Metallic  
Gasket

B3226

Price.....per lb. 1.50

This gasket is made of Rainbow Packing, mixed with long asbestos fibre, and a specially constructed metal insertion.

For Steam, Oil, Acid, Ammonia or Sulphur. Joints can be broken daily for a year.

For best results use  $\frac{3}{16}$  or  $\frac{1}{4}$  inch thick.

## WIZZARD MOULDED GASKETS

B3229

For Superheated and High Pressure Steam. The only Gasket that will successfully stand the action of superheated and high pressure steam.

For Flanges, Valve Bonnets, etc.

Price, per lb., \$1.50.



THE "KEARSARGE" ASBESTO-METALLIC  
TUBULAR GASKET



B3230

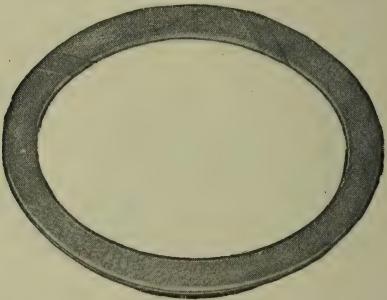
Price.....per lb. 1.50

For High Pressure Steam  
LENGTH AND WEIGHT PER BOX

Diameter	Length	Weight	Diameter	Length	Weight
$\frac{3}{8}$ in.	36 ft.	5 lbs.	$\frac{5}{8}$ in.	24 ft.	10 lbs.
$\frac{1}{2}$ "	36 "	10 "	$\frac{3}{4}$ "	18 "	12 "

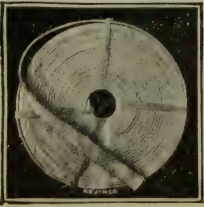
"KEARSARGE" ASBESTO-METALLIC JOINTLESS GASKETS  
(Patented)

For Boiler Manholes and Handholes



B3233

Standard Manhole Sizes.....per lb. 1.50  
" Handhole " ..... " 2.00



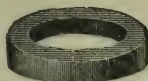
B3234

"KEARSARGE" ASBESTO-METALLIC  
GASKETING TAPE

This material is furnished braided or folded, from "Kearsarge" Asbesto-Metallic stock, and may be conveniently used as a gasket or packing on large cylinder heads, manhole and handhole plates. Put up in 5 and 10 lb. rolls;  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1, and  $1\frac{1}{4}$  inch wide.

Price, in rolls.....per lb. 1.50

**RUBBER  
HOSE WASHERS**

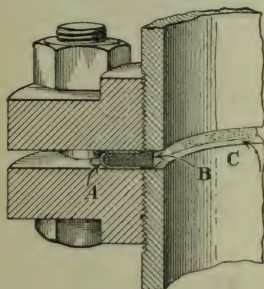


**RUBBER  
UNION GASKETS**

B3237

Size Hose.....inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Hose Washers.....per 100	...	...	.85	.90	1.30	1.40	1.50	5.00
Union Gaskets.... "	.75	.80	.95	1.00	1.40	1.50	1.70	....

Hose Washers,  $\frac{3}{8}$  and 1 inch, 75c per lb.



B3238

**THE WILCOX  
SELF-SEALING GASKET**

Made of asbestos-metallic packing, folded within copper. Having the strength of metal, the elasticity of rubber, and being constructed so that the pressure to which it is exposed automatically expands the gasket and seals the joint, hence the name "Self-sealing Gasket."

**How to Order**

If a smooth, raised, or corrugated face, give diameter just inside the bolt holes. If a male and female face, give outside diameter of recess in female end. If a tongue and groove face, give outside and inside diameter of groove.

**PRICE LIST ROUND GASKETS**

Outside Diam. of Gasket, inch.	$1\frac{1}{2}$ & less	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	7
Price .... each	.15	.16	.17	.18	.19	.20	.25	.30	.35	.40	.48	.55
Outside Diam. of Gasket, inch.	$7\frac{1}{2}$	8	$8\frac{1}{2}$	9	$9\frac{1}{2}$	10	$10\frac{1}{2}$	11	12	13	14	
Price .....each	.63	.70	.77	.84	.91	.98	1.05	1.12	1.25	1.38	1.50	
Outside Diam. of Gasket, inch.	15	16	17	18	19	20	21	22	23	24	25	
Price .....each	1.60	1.70	1.81	1.89	1.97	2.05	2.13	2.21	2.29	2.37	2.45	

Between sizes, same price as next larger listed size.

Larger sizes than listed above will be quoted on application.

Oval Man-hole or Hand-hole Gaskets quoted on application—Send template.

The following is a list of Gasket diameters for

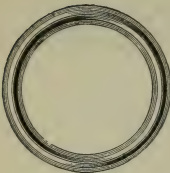
**STANDARD AND EXTRA HEAVY FLANGED FITTINGS**

when drilled according to A. S. M. E. Standard Drilling, adopted July 18, 1904, and the Manufacturers Extra Heavy Drilling, adopted Jan. 1, 1902.

Pipe Size, inch.	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	10	12	14	16
Gasket Stand. "	4	$4\frac{3}{4}$	$5\frac{1}{4}$	$6\frac{1}{4}$	$6\frac{5}{8}$	$6\frac{7}{8}$	$7\frac{7}{8}$	$8\frac{3}{8}$	$9\frac{7}{8}$	$10\frac{3}{4}$	$13\frac{1}{4}$	16	$17\frac{7}{8}$	$20\frac{3}{8}$
" Ex. Hvy "	$4\frac{1}{4}$	5	$5\frac{1}{2}$	$6\frac{1}{2}$	7	$7\frac{7}{8}$	$8\frac{1}{2}$	$9\frac{1}{2}$	$10\frac{1}{2}$	12	$14\frac{1}{4}$	$16\frac{3}{4}$	19	$21\frac{3}{8}$



LEAD GASKETS



AMMONIA GASKETS — B3239

Size .....	inches	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Each .....		.02	.02	.02	.03	.04	.05
Size .....	inches	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5
Each .....		.06	.07	.08	.08	.09	.10

BOILER MANHOLE AND HANDHOLE GASKETS — B3240

Price Each

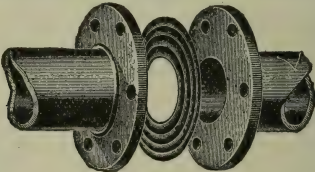
For Boilers, Stirling M. H., 50c; B. & W. M. H., 75c; Heine M. H., 75c.  
Heine H. H.,  $3\frac{1}{2}$  in. Rd., 5c;  $3\frac{1}{2}$  x  $4\frac{1}{2}$  oval, 6c; Erie or Oil City, 4 x 5 in., 8c.  
Manhole gaskets are usually oval, or have rounded shoulders on ends.

LEAD UNION GASKETS — B3241

Pipe Size .....	inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Per 100 .....		.55	.55	.60	.65	.70	.85	1.00	1.35

Always state inside and outside diameters, as different makes of unions vary.

CORRUGATED COPPER GASKETS



B3242

For Flanged Fittings. See B426. this catalogue.  
Also made in sizes fitting Lip Unions, and Flange Unions.  
Prices quoted on application.

PLAIN FERRULE



B3250

\*FLANGED FERRULE



B3251

COPPER FERRULES

For Boiler Tubes

PRICE PER 100 — Regular Sizes of Plain Ferrules

O. Diam. of Tube, in.	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	4
Length of Ferrule, in.	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	1	$1\frac{1}{4}$
$\frac{1}{8}$ inch Thick Copper	10.50	11.00	11.50	13.00	17.00	19.00	23.00	29.00	35.00	36.00
$\frac{3}{32}$ " " "	6.50	7.00	7.50	9.00	11.00	13.00	16.00	23.00	28.00	29.00

\*Flanged Pattern is special, made to order only. Add to list of Plain Ferrules, \$2.00 per 100. Can be furnished in various thicknesses, from  $\frac{1}{32}$  to  $\frac{1}{8}$  inch, and from  $\frac{1}{2}$  inch to  $1\frac{1}{4}$  inch long, at special prices.

## EUREKA GUM CORE PISTON PACKING

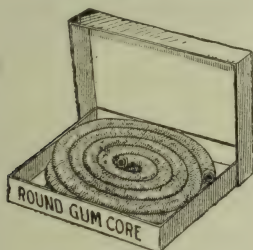


B3257

Price.....per lb. .80

For Cold and Hot Water and Low Pressure Steam Piston Rod purposes. Especially constructed for use on scored rods. All sizes from  $\frac{1}{4}$  to 1 inch, by sixteenths, and put up in boxes weighing approximately 5 pounds.

## XLNT. LUBRICATED ROUND GUM CORE PISTON PACKING



B3258

Sizes.....  $\frac{1}{4}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$  and 1 inch, Round  
Price.....per lb. .50

Put up in 5 and 10 pound boxes, or in coils weighing 25, 50 or 100 pounds.

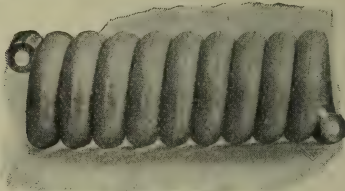
## SELDEN'S PATENT PISTON PACKING



B3259

With Rubber Core, in sizes of $\frac{1}{4}$ inch and larger.....	per lb.	.80
With Canvas " " " " $\frac{1}{4}$ " " " " .....	" "	.60
Square..... " " " " $\frac{1}{2}$ " " " " .....	" "	1.00

## PEERLESS SPIRAL STEAM PISTON AND VALVE ROD PACKING



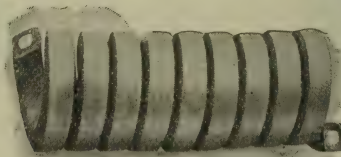
B3260

$\frac{1}{4}$  in. to  $2\frac{1}{2}$  in., per lb., \$1.00.  $\frac{1}{8}$  and  $\frac{3}{16}$  in., per lb., \$2.00.

Carried in Hard for High Pressure and Soft for Low Pressure.  
Put up in paper boxes, weights and lengths as follows:

Diameter Inches	Contents Feet	Weight Lbs.	Diameter Inches	Contents Feet	Weight Lbs.
$\frac{3}{16}$	105	$1\frac{1}{2}$	$\frac{13}{16}$	24	7
$\frac{1}{4}$	84	$3\frac{1}{4}$	$\frac{7}{8}$	24	$7\frac{3}{4}$
$\frac{5}{16}$	72	$3\frac{3}{4}$	$\frac{15}{16}$	24	9
$\frac{3}{8}$	72	$4\frac{1}{2}$	1	24	10
$\frac{7}{16}$	60	5	$1\frac{1}{16}$	12	$5\frac{1}{2}$
$\frac{1}{2}$	36	4	$1\frac{1}{8}$	12	$5\frac{3}{4}$
$\frac{9}{16}$	36	5	$1\frac{3}{16}$	12	$6\frac{1}{4}$
$\frac{5}{8}$	36	7	$1\frac{1}{4}$	12	$7\frac{1}{4}$
$\frac{11}{16}$	24	5	$1\frac{5}{16}$	12	$8\frac{1}{2}$
$\frac{3}{4}$	24	$5\frac{3}{4}$	$1\frac{3}{8}$	12	9

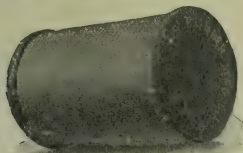
## PEERLESS SQUARE SPIRAL STEAM PISTON AND VALVE ROD PACKING



B3261

Put up same as above and made in all sizes from  $\frac{1}{4}$  to 2 inches.  
This packing should be cut into Rings when placed in stuffing box.

## WIZARD BRAIDED WICKING



B3263

For Superheated and High Pressure Steam

Price, per lb., \$2.00.

Made round or square. Especially useful for packing small valve stems. Put up in one, three, and five pound reels. Sizes,  $\frac{3}{16}$  in.,  $\frac{1}{4}$  in.,  $\frac{5}{16}$  in.,  $\frac{3}{8}$  in.

## HERCULES COMBINATION

Metallic Stop Valve Packing



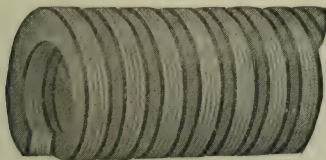
B3265

Price, per lb., \$2.50.

We can furnish this packing in spiral form and in rings. Spiral is put up in boxes, weights and lengths as follows:

Diameter.....	inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Contents.....	feet	24	24	12	12	6
Weight.....	pounds	1 $\frac{3}{4}$	3 $\frac{1}{4}$	2 $\frac{3}{4}$	4 $\frac{1}{4}$	3

## DALE'S HIGH PRESSURE AUTOMATIC STEAM TRAP PACKING



B3268

Price, per lb., \$2.50.

Put up in boxes containing 24 feet;  $\frac{1}{4}$  inch weighs 1 $\frac{3}{4}$  lbs.,  $\frac{3}{8}$  inch weighs 3 $\frac{1}{4}$  lbs. Extra sizes made to order.

This packing is made expressly for steam traps, and will last a long time under exceedingly high pressure without sticking or blowing out, and remains at all times in perfect condition.

It is made solely and expressly for this purpose.



**PALMETTO STEAM PISTON PACKING****ROUND**

Will not wear or  
score rods  
Holds lubricant until  
worn out

**SQUARE****B5270**

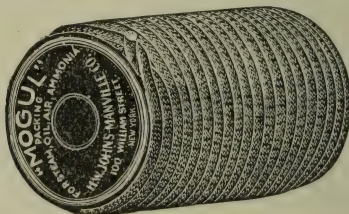
Made of Pure Asbestos, specially lubricated, in sizes ranging from  $\frac{1}{4}$  to 2 inch. From  $\frac{1}{4}$  to  $\frac{1}{2}$  inclusive is put up in two and five pound boxes,  $\frac{1}{2}$ -inch and larger in boxes containing five or six pounds.

Round or Square.....per pound 1.00

**B3271****PALMETTO VALVE STEM TWIST PACKING**

For small valve stems and a variety of uses in the engine and boiler room. Made in  $\frac{1}{8}$ ,  $\frac{3}{16}$ , and  $\frac{1}{4}$  inch sizes and put up on one-pound spools.

Price.....per pound 2.00

**"MOGUL" PACKING FOR SMALL VALVE STEMS****B3275**

Price.....per pound 1.00

Put up in  $\frac{1}{8}$ ,  $\frac{3}{16}$ , and  $\frac{1}{4}$ -inch on 1-lb. spool.  $\frac{5}{8}$ -inch size also put up on 5-lb. spools and recommended for a high-grade general purpose piston packing. This Packing is made in twisted form from strands of absolutely pure, long fiber, Asbestos Yarn, each strand thoroughly lubricated.

**VULCABESTON PISTON PACKING**

Price.....per pound 1.25

Similar to Mogul, having same material braided, making it more firm.  $\frac{1}{16}$ ,  $\frac{1}{8}$ ,  $\frac{3}{16}$ , and  $\frac{1}{4}$  inch on one-pound spools. Larger sizes on five-pound reels.

**B3279**

# "KEARSARGE" SPIRAL PACKING

For Piston Rods and Valve Stems



B3280

Per Pound..... 1.50

This packing is made of pure Asbestos and Rubber with an expansion rubber back or core, and with wire insertion for extreme high pressure.

Put up one coil to a box, from  $\frac{3}{16}$  to  $1\frac{1}{4}$  inch sizes.

REGULAR

SPECIAL



B3281

P. P. P.  
PACKING



B3282

Per Pound..... 1.00

For steam pressures of 100 pounds and less; ordinary water pressures, warm or cold; low ammonia pressures, valves, stems, etc.

Half-inch and smaller put up in boxes containing from 20 to 50 feet and weighing about 5 pounds. Larger sizes about 12 feet to the box and weighing from 7 to 10 pounds per box.

REGULAR  
Style No. 184

Per Pound..... 1.25

For steam pressures from 100 pounds up to 250 pounds; high ammonia pressures; high hydraulics; very hot water, air pumps, valve stems, etc.

SPECIAL  
Style No. 185



B3283

P. P. P.  
RINGS



B3284

Per Pound..... 1.50

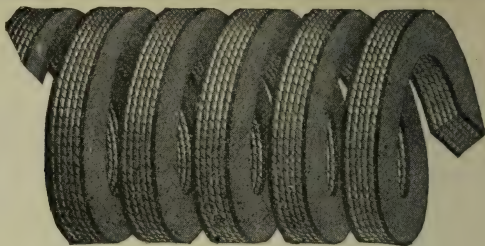
Made in all sizes to order, and shipped from factory only; put up in 5 and 10 lb. boxes.

When ordering rings, always state style and give diameter of piston rod, also inside diameter of stuffing box.

Per Pound..... 1.75

**ENGINEERS' FRIEND SPIRAL PISTON PACKING**

Steam  
and  
Ammonia



Hot  
and Cold  
Water

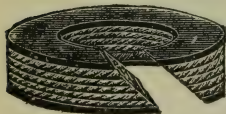
**B3285**

Price .....per lb. 1.20

A 12-foot strip in each box, weighs as follows:

Inch.....	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$
Lbs. ....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	$1\frac{7}{8}$	$2\frac{1}{4}$	3	$3\frac{1}{2}$	4
Inch.....	$\frac{3}{4}$	$1\frac{1}{8}$	$\frac{7}{8}$	$1\frac{5}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	....
Lbs. ....	$5\frac{1}{4}$	$5\frac{1}{2}$	$6\frac{1}{2}$	$7\frac{1}{4}$	$8\frac{1}{2}$	9	10	$10\frac{1}{2}$	$11\frac{1}{2}$	....

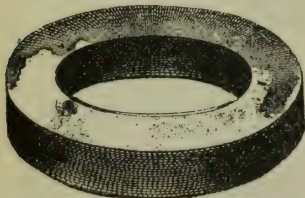
Larger sizes furnished to order.

**ELASTIC RING****B3286****ENGINEERS' FRIEND  
CUT RING PACKING****B3287**

Price .....per lb. 1.50

Made to order and shipped from factory only.

State if for Steam, Hot Water, Cold Water, or Ammonia. In ordering state size of rod, also inside diameter of stuffing-box.

**B3288****HYDRAULIC SPECIAL  
CANVAS RING PACKING**

Per pound..... 2.00

For Hot or Cold Water Pump Cylinder and inside-packed Plunger Pumps. When ordering rings be sure to state exact sizes, giving diameter of rod and inside diameter of stuffing-box.

**ARCTIC AMMONIA PACKING**

Price (Rings are made to order).....per lb. 2.00

This packing is specially constructed for ice machine service, being made of layers of rubber and plies of duck so arranged and laid as to best resist the actions of ammonia, cold, and heat. When ordering rings, give diameter of rod, also inside diameter of stuffing-box.

**B3289**



## GARLOCK PISTON PACKINGS

Low Pressure for 80 Pounds Steam or Less

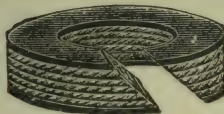
**SPIRAL, No. 15**

**ELASTIC RING, No. 5**

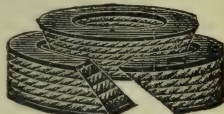
**SECTIONAL RING, No. 10**



**B3290**



**B3291**



**B3292**

Per Pound..... 1.20    Per Pound..... 1.50    Per Pound..... 1.50

Spiral in 12 ft. length, packed in paper box, approximate weight as follows:

Inches...	$\frac{1}{8}$ .	$\frac{3}{16}$ .	$\frac{1}{4}$ .	$\frac{5}{16}$ .	$\frac{3}{8}$ .	$\frac{7}{16}$ .	$\frac{1}{2}$ .	$\frac{9}{16}$ .	$\frac{5}{8}$ .	$\frac{11}{16}$ .	$\frac{3}{4}$ .	$\frac{13}{16}$ .	$\frac{7}{8}$ .	$\frac{15}{16}$ .	1.	$1\frac{1}{16}$ .	$1\frac{1}{8}$ .	$1\frac{3}{16}$ .	$1\frac{1}{4}$ .
Pounds...	$\frac{3}{8}$ .	$\frac{1}{2}$ .	$\frac{5}{8}$ .	1.	$1\frac{1}{2}$ .	$1\frac{3}{4}$ .	2 $\frac{1}{2}$ .	3.	$3\frac{1}{4}$ .	4.	$5\frac{1}{4}$ .	$5\frac{1}{2}$ .	$6\frac{1}{2}$ .	$7\frac{1}{4}$ .	$8\frac{1}{2}$ .	9.	10.	$10\frac{1}{2}$ .	$11\frac{1}{2}$ .

In ordering Spiral Packing, give the exact space between rod and stuffing box.

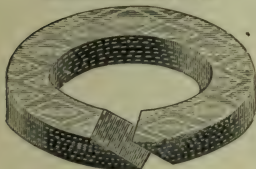
Rings are made to order, state diameter of rod, also inside diameter of stuffing box.

## GARLOCK "EXTRA" PACKINGS

For Steam, 100 Pounds or Less—Also Made for Ammonia

**ELASTIC RINGS**

Steam, No. 333  
Ammonia, No. 334



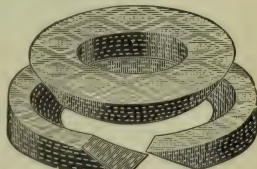
**B3295**

Made to order only.

Per Pound ..... 1.60

**SECTIONAL RINGS**

Steam, No. 336  
Ammonia, No. 337



**B3296**

**SPIRAL, No. 777, for Steam to 100 Pounds**..... per lb. 1.60  
" " 778, for Ammonia ..... " 1.60

Packed 12 ft. coil in a paper box, weight approximately same as above.

## GARLOCK "HIGH PRESSURE" PACKING—B3297

For Steam Pressures Over 100 Pounds—Also Made for Air Compressors

Made in Ring or Spiral Form, Also in Coils

Per Pound..... 2.00

Spiral, Steam, No. 150	Air, No. 221
Coil " " 125	" " 220
Ring " " 200	" " 222

The Spiral is in 12 ft. lengths, in paper box weighing approximately one-fourth heavier than table at top of page.

**GARLOCK—B3298**

**ALABASTINE PACKING, No. 17**  
For Small Pistons and Boxes and Valve Stems

Sizes, Inch,  $\frac{1}{16}$ ,  $\frac{1}{8}$ ,  $\frac{3}{16}$ ,  $\frac{1}{4}$ ,  $\frac{5}{16}$ ,  $\frac{3}{8}$ ,  $\frac{7}{16}$ , and  $\frac{1}{2}$ .

Put up on Small Spools.....per lb., 1.50

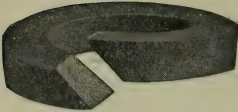


**B3297**



PEERLESS RING PACKING

STYLE 1



B3300

STYLE 2



B3301

STYLE 3



B3304

STYLE 4



B3305

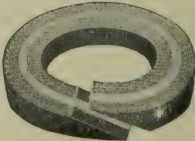
Made to order only for factory shipment.

The above cuts represent the different forms in which we can furnish Peerless Piston and Valve Rod Packing, with and without the core of Rainbow Packing Compound. Style No. 2 is furnished only when the rim of the packing is wide enough to allow sufficient body to the ring; if not, style No. 1 is sent.

Price..... per lb., \$2.00

PEERLESS EXPANSION RING PACKING

With Cushion Core made from the Celebrated Rainbow Packing.



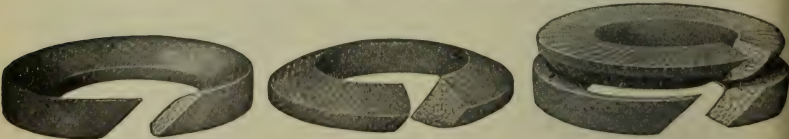
B3306

Price.....Per lb. \$1.50

Will stand extra high, steam pressure.

WIZARD PACKING RINGS

For Superheated and High Pressure Steam



B3307

Price.....Per lb. \$2.00

Made to order only.

Moulded in concave and convex form in sets of two.

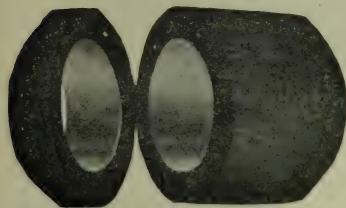
To insure easy adjustment and to avoid undue friction on valve stem a special lubricating compound is incorporated throughout this packing during process of manufacture.

## "SAFETY" PLASTIC METALLIC PACKING

For Steam, Water, Air, Gas, Hydraulic Machines, Pumps, Valves, etc.

This ring shows how the packing looks when compressed in a stuffing box, it being formed by pressure of gland.

The packing in bulk form may be used conveniently on the lower end of vertical machines. For all other places the tubes should be used.



B3310



Put up in thin cotton tubes, or in bulk in metal packages of 12, 25, 50, 100 lbs. each  
Price, \$1.00 per lb.

## "JUPITER" METALLIC — B3311

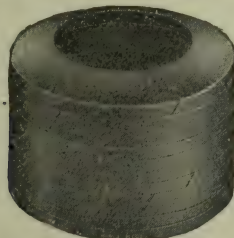
Price, per pound, \$1.50.

Similar to above and carried in stock as follows :

Size	Size of Package	Size	Size of Package
$\frac{3}{4}$	5-lb. Pail	$\frac{3}{4}$	10-lb. Pail
$\frac{1}{2}$	5-lb. "	$\frac{7}{8}$	10-lb. "
$\frac{5}{8}$	5-lb. "	1	10-lb. "

## "VULCABESTON" CONCAVE AND CONVEX THROTTLE RINGS

For Throttle Stems Against Superheated Steam



B3312

Prices upon application

## "DOLLAR" PACKING

For Steam, Water, and Air

Is a combination of braided flax and Sea Island cotton duck in alternate plys upon the piston rod, the whole being supported by a rubber cushion that will not harden in heat, placed behind the wearing surface.

Made in Coils, 15 feet long. Sizes from  $\frac{1}{4}$  in. to 2 in. varying by  $\frac{1}{16}$ th.

Each Coil boxed separately.....Per lb., net, 1.00.

## SUCCESS PACKING

For Steam, Hot or Cold Water, or Ammonia.



**B3315**

Price.....Per pound 1.00

Also in  $\frac{1}{16}$ th sizes.

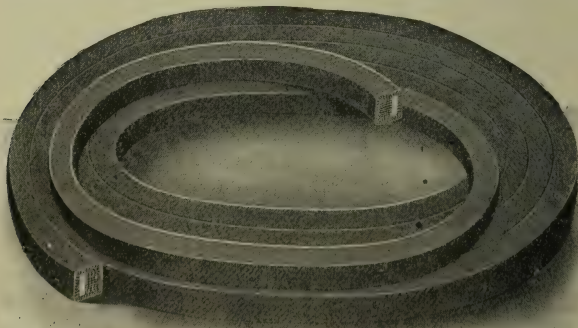
Diameter.....inch	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Contents of Box. .... ft.	25	25	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$
Weight.... lbs.	3 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{1}{2}$	7 $\frac{1}{4}$	8 $\frac{1}{2}$	10 $\frac{1}{2}$	13

Made in sizes up to 3 inch.

**This is semi-metallic diagonal expansion spiral packing rainbow core.**

The Upper Section of this packing is composed of Solid Braided Cotton Strands with Rainbow Packing Core and Soft Metallic Corners, finished to oblong shape by hydraulic pressure. By braiding the strands, the fibre never separates under the severest pressure.

## PEERLESS NO. 6 HOT WATER PUMP PACKING

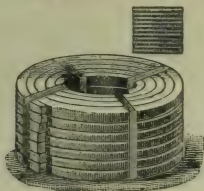


**B3316**

Price.....Per pound 1.50

This packing is especially prepared for packing the hot water end of pumps. The shape and the position in which the Rainbow core is placed keep the packing against the plunger and at all times insure a tight joint.

## SQUARE DUCK PACKING



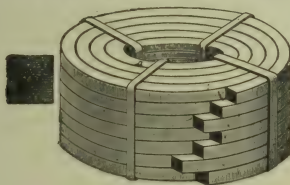
B3318

Square Duck Packing ..... per lb. \$.40

Used on cold water end of pump.

Made of alternate layers of duck and rubber in 12 foot lengths,  $\frac{1}{4}$  to  $1\frac{1}{4}$  inch square by  $\frac{1}{8}$ th. Can furnish intermediate  $\frac{1}{16}$ ths, factory shipment.

## HYDRAULIC PACKING



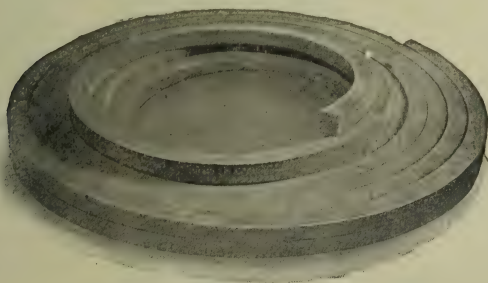
B3319

Hydraulic Square Packing.....per lb. \$.80

Made in 12 ft. lengths,  $\frac{1}{4}$  inch to  $1\frac{1}{4}$  inches, in  $\frac{1}{16}$ th sizes. Is a High Grade Packing, having a finer quality Duck and better grade Rubber than ordinary Square Duck Packing.

## PEERLESS SPECIAL CANVAS PUMP PACKING

For Cold or Hot Water



B3320

Price, per lb., \$1.00.

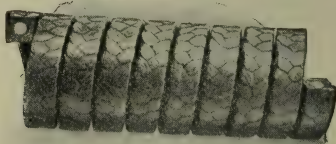
Rock Hard Grade, made especially for Very Hot Water, per lb., \$1.00.

Made in  $\frac{1}{16}$  sizes  $\frac{1}{4}$  inch and larger.

Is a high-grade Pump Packing, made on same principles as the regular Hydraulic, difference being in the quality of duck used, as well as a white friction.



**"HONEST JOHN"**  
**HYDRAULIC RAINBOW CORE PACKING**



B3324

Price.....Per pound 1.00

Diameter.....inch	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Contents of Box.....ft.	48	48	56	29	30	16	16
Weight.....lbs.	$3\frac{1}{2}$	$4\frac{1}{8}$	$6\frac{1}{4}$	6	$7\frac{3}{4}$	$7\frac{1}{2}$	$7\frac{3}{4}$

We can furnish this straight, in spiral form, and in rings.

**RAWHIDE HYDRAULIC PACKING**



B3326

Made of four strips of rawhide braided square, used for Waterworks and Hydraulic Pumps.

$\frac{1}{4}$  to 2 inch.....per lb. \$2.00



OAKUM

B3328

In 50 lb. bales.....per bale \$5.00

# SQUARE BRAIDED FLAX PACKING



As a Cold Water Packing it has no superior. Made of Pure Long Fibre Flax. Carried in stock up to 1¼-inch by ⅛th, can be furnished, however, any size to 2 inch.

## PEERLESS SQUARE BRAIDED FLAX PACKING

B3331

Price.....per lb. .60

Diameter.....inch	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$
Feet per box .....approx.	160	160	125	92	75	49½	47	45
Weight per box .....approx. lb.	5¼	5¼	6	6½	7	7¼	9	9
Diameter.....inch	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{7}{8}$	$1\frac{1}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	....
Feet per box .....approx.	32	24	21½	23	18	15	33	....
Weight per box .....approx. lb.	8	7	8½	....	9½	12	25	....

## RELIABLE SQUARE BRAIDED FLAX PACKING

B3333

Sizes ¼ in. to 1 in., by ⅛ths.....per lb., .40

TUPPER'S SQUARE BRAIDED FLAX PACKING, per lb., \$1.00

HEMP

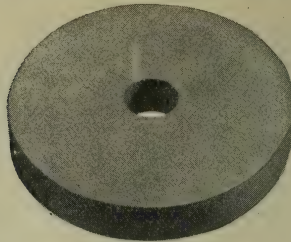


PACKING

B3340

Italian Hemp Packing in reels of 25 and 50 pounds.....	per lb. .25
American " " " 25 " 50 " .....	" .16
" " " Tallowed, in reels of 25 pounds.....	" .20
Jute Packing, in reels of 50 pounds .....	" .12

RUBBER PUMP VALVES



B3360

Price ..... per lb., \$1.00

**Style No. 154**

Red Condenser valve; very light weight; tough and elastic.

**Style No. 152**

Red or Gray Condenser valve; light weight; durable and flexible.

**Style No. 108**

Hard valve; for hot water up to 300 pounds pressure, and 200° to 300° temperature. Also for acids, syrups, oils, etc.

**Style No. 129**

Hard valve for hot water up to 200 pounds pressure, and 200° temperature.

**Style No. 188**

Hard valve for cold water; 50 to 400 pounds pressure, or warm water up to 100 pounds pressure; not over 120° temperature.

**Style No. 254**

Medium hard valve; for cold, gritty water up to 500 pounds pressure.

**Style No. 175**

Medium hard valve for cold water for mines and waterworks in pumping water in lifts of 1,000 feet or more and against a pressure of 500 pounds.

**Style No. 182**

Medium hard valve; for cold water, 150 to 400 pounds pressure.

**Style No. 139**

Medium soft valve for cold water 150 pounds pressure; or warm water to 180° temperature.

**Style No. 149**

Soft valve for cold water, 0 to 100 pounds pressure; or warm water to 100° temperature.

JENKINS BROS. PUMP VALVES

B3361

Valves above 2 inches in diameter ..... per lb. 1.00  
Valves 2 inches in diameter and less ..... " 1.50

Schedule of Principal Compounds and Service for Which They are Guaranteed

**No. 80 Compound**

Hot Water Valve, for pressures up to 250 pounds, temperature not less than 180 degrees, nor more than 300 degrees.

For Air Compressors, for oils, naphtha, syrups, beer, mild acids and other destructive fluids.

**No. 88 Compound**

For warm water up to 100 pounds pressure; cold water 50 to 400 pounds pressure.

For mining and high pressure or elevator service, where the water is often slightly oily.

**No. 93 Compound**

Cold Water Valve, for pressures up to 150 pounds; or 100 pounds pressure to 180 degrees.

**No. 94 Compound**

Cold Water Valve for pressures to 100 pounds.

**No. 15 Compound**

For Cold Water Pressure up to 75 pounds, and for Condenser Air Pumps, etc.

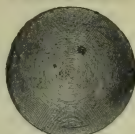
## RUBBER AND COMPOSITION BIBB DISCS



## RUBBER FULLER BALLS



## RUBBER VALVE BALL



Size of Bibb Cock.....inch	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Composition Bibb Washers, per 100 .....	.75	.75	.80	1.00	1.00
" Boss " " " 100 .....	1.00	1.00	1.00	1.50	1.50
Rubber Fuller Balls, " 100 .....	2.00	2.00	3.00	4.00	....
Red " " 100 .....	....	3.00	4.50	6.00	....

Bibb Discs and Balls are made for **Cold Water**, also for **Hot Water**.

## RUBBER VALVE BALLS

Diameter.....Inches	$\frac{3}{4}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2
Per Dozen.....	.80	1.00	1.40	1.90	2.50	3.25	4.00	4.75	5.50	6.50

Can furnish up to 8 inches in diameter. Prices upon application.

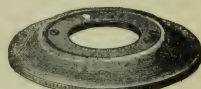
## LOW PRESSURE DIAPHRAGM



## HIGH PRESSURE DIAPHRAGM



### PUMP DIAPHRAGM



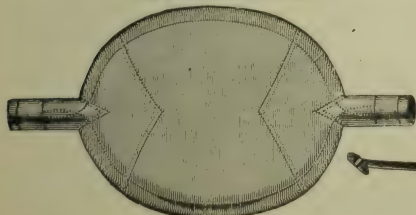
## RUBBER DIAPHRAGMS

Diameter..... inches	6¾	8	9	9½	11¾	15
Price, Low-Pressure Diaphragms..... each	..	1.00	1.00	1.10	1.45	2.65
"    High    "    "    "    "    "    "	.55		.85	...	1.45	2.65

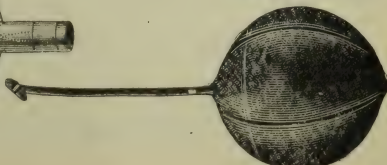
## DIAPHRAGMS FOR "EDSON" AND LOUD PUMPS

	No. 1	No. 2	No. 3	No. 4
"Edson".....each	2.00	2.00	3.00	4.00
"Loud"....."	2.00	3.00	.....	.....

## GAS ENGINE BAG



# GAS MAIN BAG

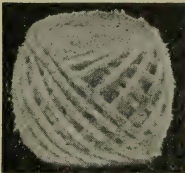


Prices on application.



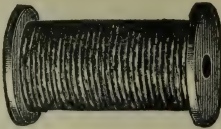
ASBESTOS PACKING

ASBESTOS WICK



B3400

ASBESTOS ROPE



B3401

Price, per lb.....\$0.50

Put up in 1/4, 1/2 and 1 lb. balls.

Price, per lb.....\$0.50

Size 1/2 in. to 1 1/4 in. by 1/8th.

Put up on reels.



B3402

CANDLE WICKING

In sacks weighing 5 pounds. About 8 balls to the pound

Price, per lb.....\$0.30



B3403

COTTON WASTE

Number .....	1	2
Price, White ..... (In 50 and 100 lb. bales) per pound	.20	.15
“ Colored .....	.15	.12
“ Cream, Furniture “ “ “ “	.25	....

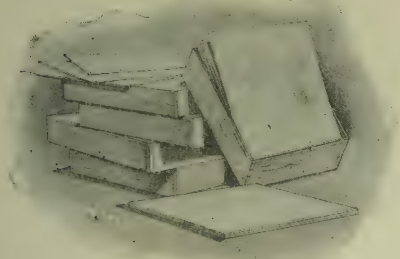
WOOL WASTE

Price (50 lb. bales).....per pound	.20
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CLEAN WIPING RAGS

Price, White (In 100 lb. bales) .....per pound	.20
“ Colored “ “ “ “ “ “ “	.15

# ASBESTOS MILL BOARD



## B3404

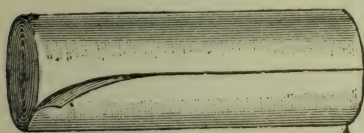
Price.....per pound .10  
 " in case lots, 250 lbs....." .07  
 Approximate weight per sheet, 40x40 inches. (Special sizes cut to order.)

Thickness..inch	$\frac{1}{32}$	$\frac{3}{64}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$
Lbs. per Sheet...	2 to 2½	3 to 3½	3¾ to 4¼	5½ to 6	7½ to 8
Thickness..inch	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	.....
Lbs. per Sheet...	11½ to 12	13½ to 14½	23 to 25	27 to 30	.....

Medium is regular. It is also made hard or soft.  
 Our Mill Board is fire and acid proof, and is valuable for packing joints in contact with fire and oils. It is also used for fire screens, partitions, ceilings, and linings for ranges, stoves, grates, gas backs.

# ASBESTOS PAPER

## B3405



This is a fire-proof sheathing largely used for lining weatherboards, partitions, etc., also used extensively for wrapping hot air furnace pipes. Thirty-six inches wide in three thicknesses, as follows:

Thin..... 6 lbs. to 100 sq. ft., or 1,300 to 1,600 sq. ft. to roll.  
 Medium... 10 " 100 " " 800 " 1,000 " "  
 Heavy.... 14 " 100 " " 500 " 700 " "

# ASBESTOS ROLL MILL BOARD—B3406

Put up in Rolls 36 inches wide, containing 50 lbs. or 100 lbs.

$\frac{1}{32}$ -inch or  $\frac{1}{16}$ -inch thick.....per pound .09  
 " " " full roll....." .06  
 $\frac{3}{32}$ -inch or  $\frac{1}{8}$ -inch thick....." .10  
 " " " full roll....." .07

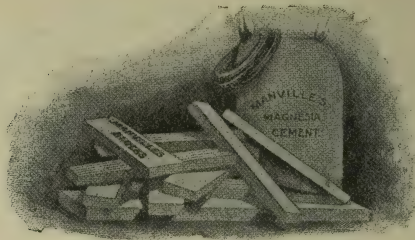
Approximate weight per 100 sq. ft.:  $\frac{1}{32}$ =16 lb.  $\frac{1}{16}$ =35 lb.  $\frac{3}{32}$ =45 lb.  $\frac{1}{8}$ =65 lb.  
 Special widths can be made to order.

# ASBESTOS ROLL FIRE FELT—B3407

In Rolls 300 square feet, 36 inches wide. This is a fire-proof Felt composed entirely of Asbestos. Used for laging boilers of locomotives and high-pressure steam-heating apparatus.

Thickness.....inches	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{1}{4}$
Price.....per square foot	.06	.08	.12

## BLOCK AND CEMENT COVERINGS

**ASBESTOS CEMENT—B3408**

Per Bag \$2.50

This is composed of Asbestos Fiber, Infusorial Earth, and a Cementing Compound. It is applied with a trowel to steam pipes, boilers, etc., while heated. It is recommended for all steam heated surfaces; furnished in bags dry. One bag contains sufficient material for covering about 30 square feet 1 inch thick.

**85% CARBONATE OF MAGNESIA CEMENT—B3409**

Per bag of 60 lbs.

85% Magnesia Cement.....	7.50
Magno Cement.....	6.00

A compound of Carbonate of Magnesia and Asbestos Fibres.

Used for insulating heated surfaces. Especially recommended for irregular surfaces and fittings where it is impossible to apply either sectional pipe covering or blocks.

**SHEEP WOOL CEMENT—B3410**

No. 1 Finishing, per sack of about 115 pounds .....	3.75
No. 2 Scratch Coat, per sack of about 90 pounds.....	3.75

**Mode of Application**

This material is applied directly to the pipes, boiler, or other surface, in plastic state, wound spirally with strong muslin, and in a few hours dries into a tough, compact mass.

**85% MAGNESIA BLOCKS—B3411**

These are made from the same material as the 85% Magnesia Covering. 6 inches by 36 inches or 3 inches by 18 inches from and including 1 inch to 3 inches thick and are highly recommended for boilers or other steam heated surfaces.

See price list B3426.

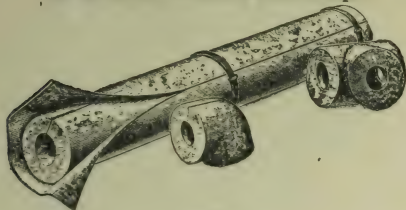
**ASBESTOS MOULDED BLOCKS—B3412**

These blocks are intended for covering boilers or other large surfaces and are furnished 4 inches by 18 inches from and including 1½ inches to 3 inches thick. They are made from the same material as Asbestos Moulded Covering.

See price list B3426.

## ASBESTOS SPONGE MOULDED COVERING

For Medium Pressure Steam Pipes

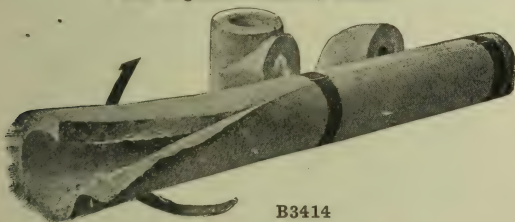


B3413

This is a moulded covering, absolutely fireproof, durable and tough. Made to fit standard pipe.  $\frac{1}{2}$ -inch to 12-inch diameter, with canvas jacket and bands. Price list, see B3425.

## ASBESTO-SPONGE FELTED

For Highest-Pressure Steam



B3414

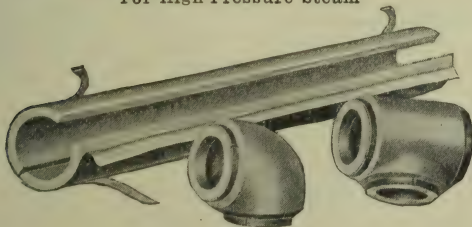
Made in sectional form, with a number of laminations of a thin felt, manufactured from pure, long-fibered Asbestos and a small quantity of granulated sponge, producing innumerable air cells. As it is very elastic, it is especially valuable where there is danger from motion and vibration. It is adapted for the highest steam pressure.

Has canvas jacket and straps.

Price list see B3425.

## 85 PER CENT MAGNESIA COVERING

For High-Pressure Steam



B3415

Carbonate of Magnesia combined with Asbestos Fibre is well known as an efficient and durable material for covering high-pressure surfaces. It is made in thicknesses from 1 in. to 3 in. to fit standard pipe from  $\frac{1}{2}$  in. to 14 in. diameter.

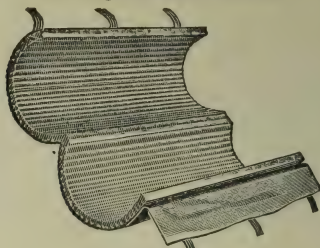
Has canvas jacket and bands.

Price list see B3425.



**ASBESTOS FIRE-FELT COVERING**

For High-Pressure Steam

**B3416**

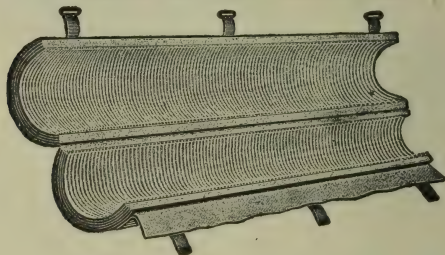
Asbestos Fire-Felt is a product of Fibrous Asbestos, and is made in sections for Pipes, sheets for Boilers, and rolls for Heaters.

Made 1 in. to 3 in. thick to fit standard pipe  $\frac{1}{2}$  in. to 16 in. diameter.

Price list see B3425.

**ASBESTOCEL COVERING**

For Medium and High Pressure Steam

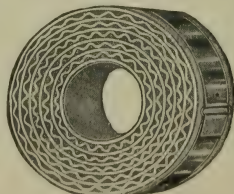
**B3417**

Asbestocel Covering is constructed of successive layers of plain and corrugated asbestos paper and is an improvement on ordinary air cell coverings, because the corrugations run around the pipe instead of lengthwise, and effectually block out circulation. Made in thicknesses  $\frac{1}{2}$  in. to 3 in. to fit standard pipes  $\frac{1}{2}$  in. to 16 in. diameter. Has canvas jacket and bands.

Price list see B3425.

**AIR-CELL  
ASBESTOS**

For Medium and Low

**B3418****FIRE-PROOF  
COVERING**

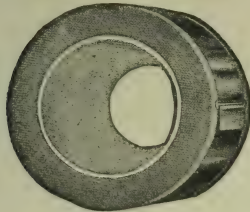
Pressure Steam

An excellent covering, light in weight, and not easily broken like moulded covering. Made in thicknesses  $\frac{1}{2}$  in. to 2 in. to fit standard pipes  $\frac{1}{2}$  in. to 16 in. diameter. Has canvas jacket and bands.

Price list see B3425

## WOOL FELT COVERING

For Hot Water Pipes



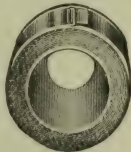
B3419

This covering is composed of layers of wool felt with an inner layer of asbestos paper next to the pipe. Intended for covering hot water heating pipes; is also used on very low pressure steam. Made in sizes for pipe  $\frac{1}{2}$ -inch to 8-inch diameter, has canvas jacket and bands.

Price list, see B3425. Made in various thicknesses.

## ANTI-SWEAT OR COLD WATER COVERING

For Pipes Conducting Cold Water Through Warm Rooms

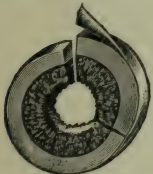


B3420

This covering is made of layers of wool felt, with an inner lining of Water-proof Insulating Paper, is about  $\frac{1}{2}$  inch thick, has canvas jacket and bands. Price list, see B3425.

## ZERO COVERING—B3421

To protect pipes against freezing



B3421

Successfully insulates cold water pipes against freezing. When exposed to weather two thicknesses should be used, one section of sufficient size to go over the first covering, breaking all joints, and the surface should be painted with asphaltum, pitch, tar, etc. Has canvas jacket and bands.

Price list see B3425

## FROST-PROOF COVERING

B3422

Consisting of a number of layers of moisture-resisting and cold-repelling felts; successfully insulates against freezing of pipes carrying cold water, gas, etc. Has canvas jacket and bands. Price list see B3425.

## SPECIAL AMMONIA AND BRINE PIPE COVERING—B3423

The thickness and arrangement of materials must be regulated by the temperature of the brine, location of pipe, and other conditions. Prospective purchasers are therefore asked for all particulars.

Quoted on application.

## SECTIONAL PIPE COVERINGS AND FITTINGS

## PRICE LIST—B3425

STANDARD THICKNESSES							SPECIAL THICKNESSES PRICE PER LINEAL FOOT			
Inside Diameter of Pipe	Price per Lineal Foot	Elbows	Tees	Crosses	Globe Valves	Flange Covers	1½ inch. Thick	2 inch. Thick	Dbl. Stan. Thick	3 inch. Thick Broken Joint
½ in.....	0.22	0.30	0.36	0.48	0.54	0.50	0.46	0.75	0.65	1.20
¾ ".....	.24	.30	.36	.48	.54	.50	.49	.80	.70	1.35
1 ".....	.27	.30	.36	.48	.54	.50	.52	.85	.75	1.40
1¼ ".....	.30	.30	.36	.48	.54	.50	.56	.90	.80	1.45
1½ ".....	.33	.30	.36	.48	.54	.50	.60	.95	.85	1.55
2 ".....	.36	.36	.42	.54	.60	.60	.64	1.00	.90	1.65
2½ ".....	.40	.42	.48	.60	.78	.70	.70	1.05	1.00	1.75
3 ".....	.45	.48	.54	.70	.96	.80	.76	1.15	1.10	1.90
3½ ".....	.50	.54	.60	.80	1.20	.90	.82	1.25	1.20	2.05
4 ".....	.60	.60	.75	.95	1.50	1.00	.88	1.35	1.40	2.20
4½ ".....	.65	.72	.90	1.10	1.85	1.30	.94	1.45	1.50	2.35
5 ".....	.70	.90	1.20	1.50	2.25	1.60	1.00	1.55	1.60	2.50
6 ".....	.80	1.30	1.60	2.00	2.80	1.90	1.10	1.70	1.80	2.70
7 ".....	1.00	1.80	2.20	2.80	3.60	2.20	1.20	1.85	2.25	2.90
8 ".....	1.10	2.40	3.00	3.60	4.40	2.50	1.35	2.00	2.50	3.15
9 ".....	1.20	3.00	3.80	4.40	5.30	2.90	1.50	2.20	2.70	3.40
10 ".....	1.30	3.60	4.60	5.20	6.20	3.30	1.65	2.40	2.90	3.65
*12 ".....	1.85	.....	.....	.....	.....	.....	1.85	2.70	4.10	4.10
14 ".....	2.10	.....	.....	.....	.....	.....	2.10	3.00	4.60	4.60
16 ".....	2.35	.....	.....	.....	.....	.....	2.35	3.30	5.10	5.10
18 ".....	2.60	.....	.....	.....	.....	.....	2.60	3.60	5.60	5.60
20 ".....	2.85	.....	.....	.....	.....	.....	2.85	4.00	6.00	6.00
24 ".....	3.30	.....	.....	.....	.....	.....	3.30	4.50	7.00	7.00
30 ".....	4.00	.....	.....	.....	.....	.....	4.00	5.50	8.40	8.40

\*All Magnesite coverings above 14" furnished in segmental form, other coverings in sectional form in all sizes.

All pipe coverings are supplied in sections three feet long, canvased and with bands. For irregular flanges or fittings larger than 10 inches use our Magnesite Cement or Asbestos Cement Felted.

## ALL SHEETS AND BLOCKS

## PRICE LIST—B3426

Per Square Foot

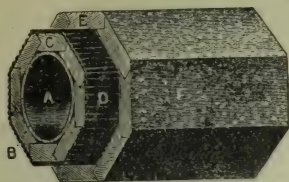
½ in.	0.27	1¾ in.	0.42	2½ in.	0.64	2¾ in.	0.87
¾ "	.27	1½ "	.45	2¼ "	.68	3 "	.90
1 "	.30	1¾ "	.49	2½ "	.72	3¼ "	.98
1 1/8 "	.30	1¾ "	.53	2½ "	.75	3½ "	1.05
1 1/4 "	.34	1¾ "	.57	2½ "	.79	4 "	1.20
1 1/2 "	.38	2 "	.60	2½ "	.83	.....	.....

## WYCKOFF'S WOOD PIPE COVERING

## PATENT COVERING

B3427

(Illustration shows Lined covering.)

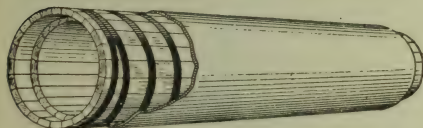


A—Tin Lining B—Asbestos C—Wood D—Corrugated Paper E—Wood F—Asphaltum Coating

## ROUND STAVE COVERING

B3428

Socket Connection as  
Illustrated.



Inside Diameter Covering in.	2	2½	3	4	5	6	7	8	9	10
For Size Pipe . . . . . in.	1	1½	2	2½	3½	4½	5	6	7	8
Patent Lined . . . . . per ft.	.34	.41	.50	.65	.81	.98	1.13	1.30	1.46	1.62
“ Unlined . . . . . “	.25	.30	.36	.48	.60	.72	.84	.96	1.08	1.20
Wood Stave Lined . . . . . “	.27	.34	.38	.49	.60	.74	.87	1.02	1.17	1.32
“ “ Unlined . . . . . “	.18	....	.26	.36	.44	.50	.60	.68	.79	.90

Inside Diameter Covering in.	11	12	13	14	16	17	18	19	20	....
For Size Pipe . . . . . in.	9	10	11	12	13	14	15	....	....	....
Patent Lined . . . . . per ft.	1.78	1.94	2.11	2.27	2.59	2.75	2.92	3.08	3.24	....
“ Unlined . . . . . “	1.32	1.44	1.56	1.68	1.92	2.04	2.16	2.28	2.40	....
Wood Stave Lined . . . . . “	1.51	1.70	1.90	2.09	2.59	2.73	2.90	3.03	3.16	....
“ “ Unlined . . . . . “	1.05	1.20	1.35	1.50	1.93	2.02	2.14	2.23	2.32	....

The Patent Covering is made of two thicknesses (eight staves each) of White Pine, each thickness wound with galvanized wire, and having two thicknesses of heavy corrugated paper between the inner and outer jacket. For underground use the covering is coated on the outside with black asphaltum pitch. When used exposed it can be furnished painted outside with black asphaltum paint. Wood covering is made in from 4 to 8 feet joints to be slipped over the pipes as they are being connected, but where pipe is already connected up, the Patent Covering can be furnished opened at a joint to be clamped around the pipe. The Unlined Covering is suitable for cold storage or brine pipe, and for hot water or low-pressure steam pipes. The Lined Covering is intended for any pressure steam above 10 pounds, the lining of tin and two layers of Asbestos paper preventing wood from charring.





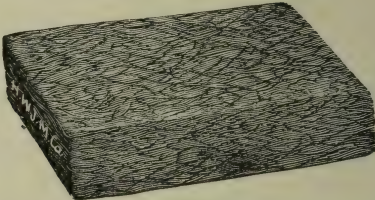
B3430

MINERAL WOOL

Mineral Wool has become a staple article and is generally used for all purposes of fire-proofing and cold storage insulation. It requires about  $\frac{3}{4}$  of a pound to cover 1 square foot of surface 1 inch thick.  
Ordinary grade weighs 14 pounds per cubic foot. Selected grade, 10 pounds per cubic foot. Extra grade, 6 pounds per cubic foot.

In 50-pound bags.....per bag, 2.50  
Ton lots quoted on application.

STANDARD HAIR FELT

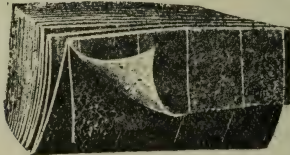


B3431

Thickness..... inches	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2
Price.....per square foot	.07	.08 $\frac{1}{2}$	.10 $\frac{1}{2}$	.12	.18	.24

Put up in sheets 6 feet wide and rolled in bale of 300 square feet. Can be furnished 3 feet wide if desired.

KEYSTONE HAIR INSULATOR



B3432

This insulator consists of clean washed Cattle Hair between two layers of strong, non-porous paper securely fastened together. The following carried in stock.  
Packed in bales, folded, not rolled, three feet wide, containing 500 square feet each.

Brand	Bale Weight Pounds	Measure of Bale Inches	Price Per Bale
Acme. Plain Paper both sides, for lining, interlining and deadening purposes .....	60	18 x 18 x 36	5.75
Peerless. Felt paper one side. Plain paper other side, for deadening immediately under flooring boards.....	80	18 x 20 x 36	7.50

WOOL DEADENING FELT—B3433

Not Illustrated

Grade	Plain	Plain	Corrugated	Corrugated
Square feet to roll.....	450	450	450	450
Weight.....lbs.	1	1 $\frac{1}{2}$	1	1 $\frac{1}{2}$

Price, all sizes, \$3.00 per 100 pounds. 36 inches wide.

## ASBESTOS ROOFING

### MANVILLE BRAND



B3434

1. Pure Asbestos Saturated Sheet
2. Layer of Acid and Waterproof Asphalt Cement
3. Heavy Canvas Burlap Saturated
4. Layer of Acid and Waterproof Asphalt Cement
5. Pure Asbestos Saturated Felt
6. Layer of Acid and Waterproof Asphalt Cement
7. Pure White Asbestos Felt Weather Surface

Prices quoted on application.

### RUBBEROID ROOFING—B3435

Not illustrated.

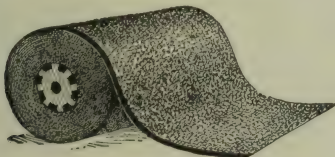
One of the best roofings on the market. Can be furnished as follows :

Ply	Weight Per Square	Price Per Square
1	35 lbs.	2.25
2	45 lbs.	3.25
3	55 lbs.	4.00

Each square containing 100 square feet, 32 inches wide.

Cement, nails, and caps, and extra material for 2" lap included.

### MINERAL ASPHALT GRAVEL ROOFING



B3436

Manufactured from genuine Trinidad Lake Asphalt, which makes it as nearly fireproof as any ready roofing in the market.

Put up in rolls 40½-feet long, 32-in. wide, containing 108 sq. feet, sufficient to cover 100 sq. feet of roof allowing the difference for the laps, cement and nails for lap included.



## TARRED PAPER ROOFING

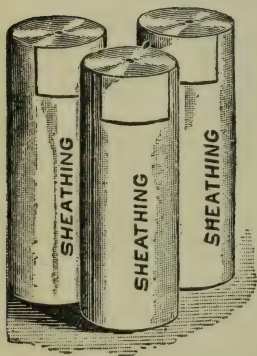
B3437

Put up in Rolls 32" wide of  
108 square feet.

1 ply complete with Nails  
and Caps, \$2.50.

2 ply complete with Nails  
and Caps, \$3.00.

3 ply complete with Nails  
and Caps, \$3.50.



## BUILDING PAPER

B3438

Red Rosin Sized

Grade.....	A	B	C
Square Feet .....	500	500	500
Weight per Roll.....lbs.	30	25	20
Price.....	.87	.63	.58

## METAL ROOFING AND SIDING CORRUGATED SHEETS

2½-Inch Corrugations. Painted or Galvanized



B3439

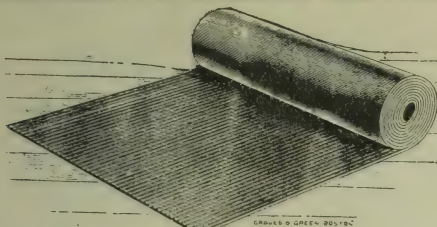
Prices on application.

Gauge No. ....	28	26	24	22	20
Painted, Weight per Square.....pounds	68	83	110	137	163
Galvanized, Weight per Square.....	85	98	124	152	180

Regular stock lengths, 4, 5, 6, 7, 8, 9, 10, and 12 feet. When lengths not specified, 8-foot sheets always sent. An extra charge is made for 12-foot sheets.

Can furnish with corrugations smaller than 2½ inch, at special price.

## CORRUGATED RUBBER MATTING



B3440

Per pound, 40c.

Much heavier than common corrugated matting.  
Thicknesses and weights as follows:

Thickness Inches	Width Inches	Yards Long	Weight Pounds	Thickness Inches	Weight Per Sq. Yard, Lbs.
$\frac{3}{32}$	30	1	6	$\frac{3}{16}$	14 $\frac{1}{2}$
$\frac{3}{32}$	35	1	7	$\frac{1}{4}$	19
$\frac{3}{32}$	36	1	7 $\frac{1}{4}$	$\frac{5}{16}$	24
$\frac{3}{32}$	40	1	8	$\frac{3}{8}$	28 $\frac{1}{2}$
$\frac{1}{8}$	30	1	7 $\frac{1}{2}$	$\frac{7}{16}$	33
$\frac{1}{8}$	35	1	8 $\frac{3}{4}$	$\frac{1}{2}$	38
$\frac{1}{8}$	36	1	10	..	....
$\frac{1}{8}$	40	1	11	..	....

## METAL INSERTED MATS



B3441

Are made with Metal insertions in each or every other rubber diamond, as desired.

Manufactured up to 80 inches wide and 6 feet long.

$\frac{3}{16}$ inch thick, per square foot.....	1.00
$\frac{1}{4}$ " " " " " " .....	1.30

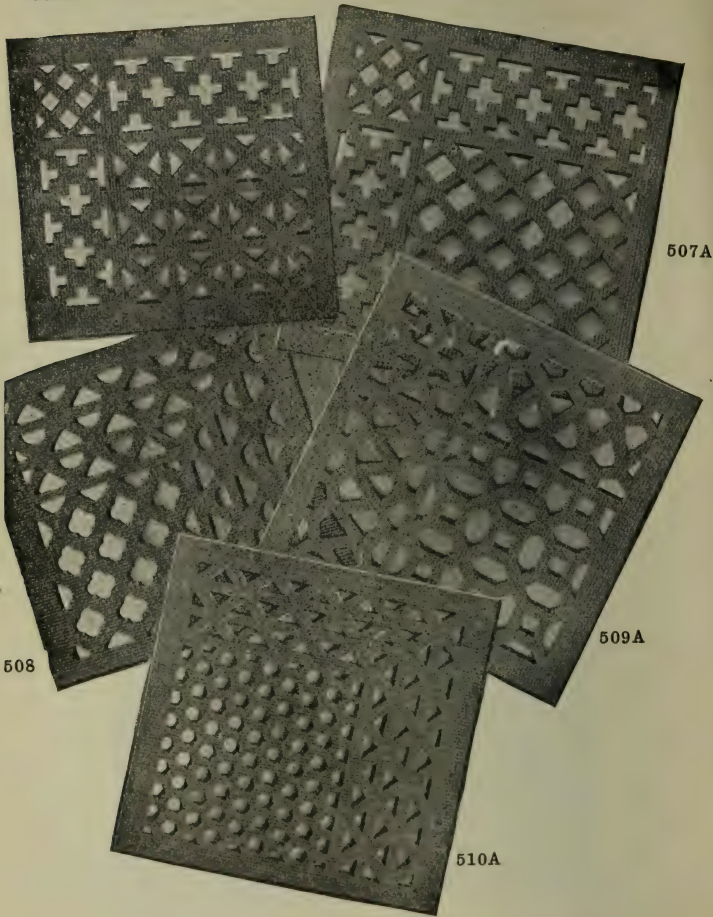
## RUBBER MATS AND RUBBER MATTING IN ROLLS

Can be furnished in many different patterns, colors, thicknesses and widths. Please state requirements as to quantity desired and purpose to be used for and we will quote prices.



PERFORATED RUBBER MATTING

505A



B3442

PERFORATED RUBBER MATTING

Thickness .....	inch	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Per Square Foot .....		.75	1.00	1.25	1.50

Letters, Each Extra, 50c.

Made in widths up to 6 feet, and any color desired.



## WHITE SEAL BELT DRESSING

### FOR USE ON LEATHER, RUBBER, COTTON, OR RAWHIDE BELTING

B3445

Directions for Using—Heat the Dressing to a temperature that will not burn the hand and apply with a brush or rag to both sides of the belt while not in motion. Or to prevent belts from slipping, apply cold to the pulley-side of belt while in motion.

White Seal Dressing will make your belts soft and pliable, transmit fifty per cent. more power and last longer than any other dressing on the market. No Resin or other ingredients in this dressing that will injure your belts. Guaranteed to give satisfaction.

Put up in 1-lb., 2-lb., 4-lb., and 8-lb. cans.

Price.....per lb. .50

## DIXON'S BELT DRESSING



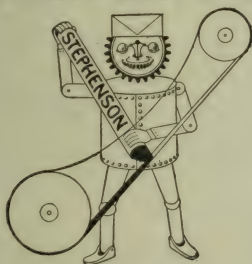
B3446

Put up in 1-lb. Bars in paste form for use on any kind of belting.

Price.....per lb. .40

## STEPHENSON BELT DRESSING

For Leather Belt  
For Rubber Belt



For Canvas Belt  
For Cotton Belt

B3447

Put up in 1-lb. Bars in paste form.

Price.....per lb. .40

## RUBBER CEMENT—B3448

Put up in 1-lb. cans.

Price.....per lb. 1.50

## LEATHER BELT CEMENT—B3449

Price.....per lb. 1.50

We manufacture a Belt Cement which, for the sake of convenience, we put up in cans weighing one pound each. We sell it either in cans or in cake as desired.

### Directions for Preparing and Using Leather Belt Cement

Heat in an ordinary glue pot, and when dissolved, if found to be too thick, reduce with water to about the consistency of syrup. Apply with a brush while hot a thin coating to the surface of the laps to be cemented and rub down with some smooth instrument. The face or pene of a hammer may be used. The laps cemented should be allowed to set for at least one hour.



B3450

## SMOOTH-ON IRON CEMENTS

**SMOOTH-ON** is a chemical iron compound, and with the exception of the **Elastic Cement** which is mixed ready for use, is prepared in powdered form, and, when mixed with water to the consistency of a stiff putty, possesses the property of metallizing, and, if unconfined, expands while hardening. By this action it is valuable for many mechanical uses. It will resist the action of heat, steam, water or oil. It will not produce corrosion, whether applied to cast iron, wrought iron or steel. Will make permanent repairs.

**SMOOTH-ON CASTINGS**—For Foundrymen, is an iron cement for repairing blemishes, blow holes, or other defects in iron or steel castings. Applied as a putty. Yellow labeled cans.

Smooth-On Castings .....	1 Lb.	5 Lb.	10 Lb.	25 Lb.
Per can .....	.80	3 50	6.00	12.50

**SMOOTH-ON IRON CEMENTS—No. 1 and No. 2, for Engineers.** These cements are for repairing leaks or breaks in castings and for making connections in steam and hydraulic work, and for practically any repairs in iron or steel. Will withstand fire. No. 1 is quick hardening; No. 2 is slow hardening. Applied as a paste or putty. Put up in blue labeled cans.

Smooth-On Iron Cements.....	1 Lb.	5 Lb.	10 Lb.	25 Lb.
Per can.....	1.00	4.00	7.00	15.00

**SMOOTH-ON ELASTIC CEMENT.**—A hydraulic iron cement, especially prepared in oil for use on all seams of boilers or tanks to stop leaks; also, for boiler patching and screw thread joints. Applied as a paint, paste or putty. Put up in gray labeled cans.

Smooth-On Elastic Cement.....	1 Lb.	5 Lb.	10 Lb.	25 Lb.
Per can.....	1.00	4.00	7.00	15.00

**SMOOTH-ON JOINTS**—An iron cement for connecting bell and spigot cast iron pipe in place of calking with lead, and in combination with lead. Applied as a stiff putty. Put up in red labeled cans.

Smooth-On Joints .....	5 Lb.	10 Lb.	25 Lb.
Per Can.....	2.00	4.00	7.50

Directions for use on each can.

## LEAK-NO —B3454

Put up in Cans .....	1 Lb.	5 Lb.	25 Lb.	50 Lb.
Per pound.....	2.00	1.80	1.70	1.50

**SOME OF THE USES OF LEAK-NO.**—For repairing cracks or spongy spots in iron or steel castings to make them steam or water tight, especially useful in repairing furnaces, boilers and radiators, gas-engine cylinders, wrought or cast-iron pipes, and tanks holding steam, water, gas, oil, ammonia or brine.

Will make water-tight joints between the ends of steel plates. Used instead of lead on soil pipe joints, and for setting prism lights. Used for setting waste plugs of shower baths in concrete, tile, etc. **Leak-No** will stand any heat that iron will stand—it expands and contracts equally with the metal, insuring permanent repair.

## “LEAK STOPPER” CEMENT—B3455

Per package weighing about 3 pounds, containing a box of powder and a bottle of acid for mixing ..... net 6.00  
For repairing boilers, radiators, pipes, fittings, etc. Will stick iron, brass, copper, lead, tin, glass, marble, wood, etc.

SCREW  
PIPE  
JOINT  
FILLER



LUBRICANT  
AND  
CEMENT  
COMPOUND

**B3460**

Red Cross Pipe-joint Filler is a mineral product which cannot be affected by acids, alkalis, superheated steam, or electricity. It is warranted to make tight joints that will remain tight. It will not harden in the joint, and a joint which has been made for years can be taken apart easily, without injury to pipe or fitting.

Made in two colors, Light and Dark.  
Dark for General Use—Light for Nickel-Plated Work.

1 Pint Cans, (24 pints in a case).....	Per can	.50
2 Quart Cans, (6 2-quart cans in a case).....	"	1.40

**H-O PIPE JOINT CEMENT B3461**

Put up in...	1 lb. Can	5 lb. Can	12½ lb. Can	25 lb. Can	50 lb. Can	Bbl.
Per Pound...	.30	.28	.25	.24	.23	.22

In making up joints, it has the same effect as a lubricant of the best graphite, and while the making and breaking of joints is thus facilitated, a perfectly tight joint is maintained at all times.

H-O Pipe-joint Cement is mixed with linseed oil for all pipe work, such as Steam, Water, Gas, and Air, and by mixing with water may be used as a putty for connecting up Sink Wastes, Basement Plugs, Bath Plugs, Closets, etc.

**U. S. METAL POLISH**

For Polishing Gold, Silver, Plated Ware, Nickel, Tin, Brass, Copper, etc. Warranted Free from Acid or Grit.

U. S. Metal Polish Paste removes Stains and produces a brilliancy equal to new. It is unequalled for polishing and cleansing Gold, Silver and Plated Ware, Show Cases, Scales and Store Fixtures, Brass, Nickel, Copper, Zinc and Tinware, Band Instruments, Locomotive and Machine Mountings, Headlight Reflectors, Carriage and Harness Mountings, Dairy and Kitchen Utensils, Metal Street Signs, and everything in the planished metal line.



**B3462**

Paste	Each	Doz. Lots	Liquid	Each	Doz. Lots
3 Ounce Boxes...	.20	1.00	8 Ounce Cans ...	.50	2.50
½ Pound " ...	.50	2.50	1 Pint " ...	.80	4.50
1 " " ...	1.00	4.50	1 Quart " ...	1.20	8.50
5 " Pails...	2.00	18.00	1 Gallon " ...	2.50	18.00

**BAR-KEEPER'S FRIEND (POWDER)**

1 Pound Boxes.....	Per Box	.50	Full Doz. Lot.....	3.50
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Special prices quoted on Gross or Great Gross lots.





B3463



B3464

The following are barrel prices, see note.

CYLINDER OILS

	Per Gallon.
ED Valve 650 Fire Test.....	.75
CCC Cylinder 600 Fire Test.....	.60
Banner Valve 600 Fire Test, Filtered.....	.70
Gem Cylinder.....	.45

ENGINE OILS

Per Gallon.	Per Gallon.
Special Red Engine Oil, 450 Fire Test .....	.45
Arctic Engine Oil .....	.35
Indiana Engine Oil .....	.35
Gasoline Motor Car Oil .....	1.00
Gas Engine Oil, 600 Fire Test .....	.50
Golden Gas Engine Oil .....	.35
OK Castor Machine Oil .....	.40
XXX Castor Machine Oil .....	.45
Dynamo Amber Oil, 400 Fire Test ..	.40
Black Oil (Summer) .....	.25
No. 7. Cold Test Black Oil .....	.20
Zero Black Oil .....	.20
Lard Oil .....	1.25

Combination Screw Cutting Oil quoted on application.

Above are barrel prices. For less quantity we charge extra (for cans), as follows:

½ Barrel. ....net extra for package	.75	3 Gallon .....	net extra for can	.35	
10 Gallon .....	net extra for can	.75	2 Gallon .....	" " " "	.25
5 Gallon .....	" " " "	.50	1 Gallon .....	" " " "	.20

HARD OIL—B3465

No 4, in 5, 10, 25 and 50 lb. packages.  
Per lb..... 12c

AXLE GREASE—B3466

Gem, 25 lb. pail.....2.00  
Grapho, 25 lb. pail.....2.50



B3467

ALBANY GREASE

For Engines, Automobiles, Machinery, etc.

In 5, 10 and 25 lb. cans .....	per lb.	.40
" 50 lb. cans .....	"	.36
100 lb. keg at 32c. Half-barrel, 200 lb. 26c.		
Barrel, 400 lbs. at 24c. per lb.		

When ordering Compound, give the temperature of room or climate—size of bearing—if lubricated by Cups or Swabbing.

Always mention for what part or kind of machinery intended.

No. 0. very soft for extreme cold weather and exposed journals. No. 1, is harder for ordinary journals in cold weather, or very slow running journals and elevator slides. No. 2, is still harder, and is grade ordinarily used in moderate and warm weather, and general shafting. No. 3, is for use on all stationary and marine engines, also shafting in warm weather, dynamos and general high speed machinery.

No. X is of extra hardness, will lubricate journals where no oils or other kinds of lubricants will work. No. XX is harder than X, is for extreme conditions; melting point 125° to 150° F. No. XXX is very hard, for unusual conditions; melting point 165° to 175° F.

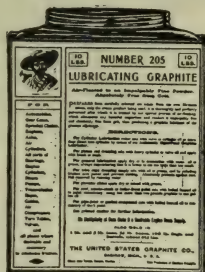
## LUBRICATING GRAPHITE

## DIXON'S FLAKE GRAPHITE



B3468

## U. S. PULVERIZED GRAPHITE



B3469

1-lb. can.....	per can	.40	1-lb. Pat. Friction Top Can, per can	.40
5 " ".....	"	1.80	5 " Screw Top Tin Cans " "	1.80
10 " ".....	"	3.50	10 " " " " " " " " "	3.30
Barrel .....	per lb.	.25	25 " Strawboard Boxes...per box	6.00
			Kegs (about 100 lbs.).....	.20
			Barrels (about 325 lbs.)...	.18

The U. S. Pulverized Graphite is packed in cases as follows: 30 1-lb. cans, 12 5-lb. cans, 6 10-lb. cans, or 2 25-lb. boxes.

Recommended as a lubricant for steam and gas engine cylinders, for piston rods, and for all bearings; also for making smooth joints, and should be applied to all rubber and canvas packing.

The Pulverized Graphite can be used mixed with linseed oil as a preservative paint for smoke-stacks, boiler-fronts, etc., or as a joint compound for pipes, etc.



B3470

## GRAPHITE GREASE

1-lb. Cans (36 in case).....	per can	.70
5 " Tin Pails (12 in case).....	"	3.00
10 " " " (6 in case).....	"	5.50
25 " Wood Pails.....	per pail	12.00
Kegs (about 140 lbs.).....	per lb.	.44
One-half Barrels (about 300 lbs.).....	"	.42
Barrels (about 500 lbs.).....	"	.40

This Lubricant is a compound of best quality **Lubricating Graphite** with proper mineral oils, and is of such consistency as to be easily introduced with an ordinary oil syringe, or, which is preferable, the gear case may be taken apart and packed with the grease, which is **absolutely free from grit** and may be used freely.

It will be found much more economical than oil or other greases, not only because of the wearing quality imparted by the lubricating graphite in its composition, but also because it will not run and leak out as does oil or common grease.

It is not affected by heat or cold. For general automobile lubrication, and particularly desirable for transmission or speed-changing gears, differentials, enclosed gears, etc., etc.

GRAPHITE  
PAINT



B3471

PRICES, COLOR A—NATURAL COLOR, AND COLOR D—DARK BROWN

Liquid, Ready-for-use

½ gal. Tin Pails(12 in case),per gal.	1.60	10 gal. Kits..... per gal.	1.40
1 gal. Tin Pails (6 in case) “	1.55	½ barrels (about 30 gal.)... “	1.30
5 gal. Kits..... “	1.45	Barrels (about 52 gal.)..... “	1.25

Paste Form

To make one gallon liquid paint, mix 3¼ lbs. paste with ¾ gal. boiled linseed oil.

5 lb. Tin Pails (20 in case), per lb.	.15	125 lb. Kegs..... per lb.	.13
12½ lb. Tin Pails (8 in case) “	.14	½ barrels (about 350 lbs.).. “	.12½
25 lb. Tin Pails (4 in case).. “	.13½	Barrels (about 600 lbs.).... “	.12

Semi-Paste Form. Quoted on application.

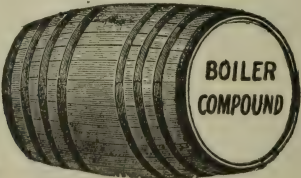
EXTRA

**Color B—Dark Green.** Add to prices above listed 1c. per pound on Paste Form and 10c. per gallon on Ready-for-use Paint.

**Color C—Jet Black.** Add to prices above listed ½c. per pound on Paste Form and 5c. per gallon on Ready-for-use Paint.

Graphite Paint is unequalled for durability. Owing to its large covering power and reasonable price, costs less than other good paints—a paint that is inexpensive but not cheap—just the thing for Structural Iron and Steel, Steam Pipes, Coils, Roofs, Smoke Stacks, Boiler-fronts, Gas Holders, Vessels, Fences, Freight Cars, Water Tanks, Bridges, Grain Elevators, Trolley Poles, etc., etc.

ACME BOILER COMPOUND  
Dry and Liquid Form



B3472

Dry, 50 lb. Box	} .....per lb., .20	Liquid, 5 Gallon Can	} .....per lb., .10
“ Quarter Barrel		“ 10 “ “	
“ Half “		“ Half Barrel	
“ Full “		“ Full “	

Directions and information furnished on application.

## JAMES BROS. WORLD RENOWNED OIL SOAP

A PERFECT CLEANER AND RENEWER  
PURELY A VEGETABLE PRODUCT  
EFFICIENT AND ECONOMICAL

For all kinds of Cleaning and General Use in

Buildings  
Hotels  
Theatres  
Hospitals  
Schools  
Public Institutions  
Dry Goods Stores



B 3473

Automobile Garages  
Liveries  
Fire Departments  
Churches  
Street Railway Cars  
Boat Lines  
Factories  
Household

Unexcelled for Automobiles, Carriages and Harness Cleaning

There is nothing James Bros. Oil Soap will not clean, no finish so fine, no fabric so delicate, as to be injured in any degree by its continued use.

Pure and harmless yet wonderfully cleansing. It is so far superior to common soaps and powders that you will be surprised.

James Bros. Oil Soap is put up as follows:

Barrels, containing about 450 lbs.;  $\frac{1}{2}$  barrels, 250 lbs.;  $\frac{1}{4}$  barrels, 125 lbs.; pails, 50 and 25 lbs.



## BLACK ASPHALTUM PAINT

For Smoke Stacks, Boiler Fronts,  
Pipe and Iron Work of all kinds.

Used Extensively as a Ce-  
ment on Screwed Pipe  
Joints.



Asphaltum can be furnished in barrels, half barrels, or in cans of any size desired. It is put up in many grades to suit the price, or the use for which intended. Prices on application.

State relative quality wanted, and for what purpose used.



## SPECIAL COMPOUND RUBBER ROOFING CEMENT

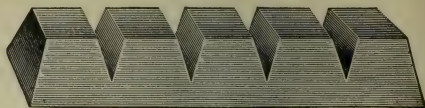
The most reliable article ever used for repairing leaky roofs of every kind, cementing joints around chimneys, skylights, dormer windows, fastening broken slates, cementing gutters, etc. It firmly adheres to all surfaces; will not crack nor peel off. It slowly hardens into a leather-like surface that will last as long as the roof stands. Color red.

In butter firkins, per lb.....	.05
In 5, 10 and 15 lb. cans, per lb.....	.06



**B3484**

About 6 pound bars.

**BABBITT METAL****B3485**

About 8 pound bars.

<b>Genuine Babbitt</b>	( n 6 pound bars)	.....	per pound	.60
"	" (in 8 " " )	.....	"	.60
No. 2	" (in 8 " " )	.....	"	.17
No. 4	" (in 8 " " )	.....	"	.10

The **Genuine** is intended for **High Speed and Hard Work**.The **No. 2** is **Medium Grade** for general purpose.The **No. 4** is a **Cheap Grade** for slow speed.

The above brands are put up at the factory in 50 pound boxes.

**B3486**

In bars of about 6 pounds each. Per pound, 26c.

**Reliable** is a **Good Grade** for line shafting and ordinary low class duties.**SUPERIOR BABBITT****PEERLESS BABBITT****B3487**

About 2 pounds to the cake, fitting ladle.

Per pound, 70c.

**B3488**

About 8 Pounds to the bar. Each cake fits in ladle. Per pound, 35c.

Peerless is suitable for general mill work and mill machinery, where speed does not exceed 1,150 revolutions and pressure one ton per square inch. Especially adapted for all classes of wood-working machinery.

**A Nickel and Copper Hardened Metal**  
for **High Speed**.**ALUMINUM COPPER ANTI-FRICTION METAL****GENUINE****EXTRA****B3489**

Put up in bars of about 6 pounds each. Boxes approximately 50 pounds.

Genuine, per pound, 70c. Extra, per pound, 25c.

Is a very high grade metal, and is particularly suitable for use on machinery where linings of boxes are unusually shallow, and where great tensile strength is required to sustain great pressure at high speed.

For high or low speed machinery. Is lighter in weight than other grades.



B3490

**PIG LEAD**

Usually approximately 80 lbs. each.  
Per lb.....10c



B3491

**LEAD BLOCKS**

Approximately 5 lbs. each.  
Per lb.....12c

**LEAD SHEET AND PIPE**

Sheets are usually 9 feet wide and of various thicknesses. Pipe is made all sizes from  $\frac{1}{8}$  inch to 4 inches diameter, and of various weights for different purposes.



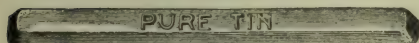
B3492

**PIG TIN**

Usually over 100 lbs. each.  
Per lb.....80c

**BLOCK TIN PIPE**

Prices on application.



B3493

**BAR TIN**

Usually about  $1\frac{1}{2}$  lbs. each.  
Per lb.....90c

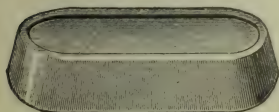
**BAR SOLDER**



B3494

Usually carried in stock in Half and Half grade; also 40-60 grade for wiping. Bars usually about  $1\frac{1}{2}$  lb. each.  
Half-and-half per lb....50c  
40-60 grade same price as below.

Furnished in Commercial and Warranted brands.



B3495

**WIPING SOLDER**

40-60 grade usually in blocks of about  $3\frac{1}{2}$  lbs. each.  
Per lb.....40c  
Solder is packed in 500-lb. cases.  
Wire Solder (half-and-half) on spools.  
Silver Solder in sheets  $\frac{3}{8}$  x 48 inches.

**ANTIMONY**



B3496

**SPELTER OR ZINC**



B3497

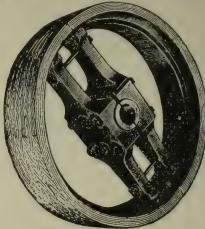
Per lb ..... Per lb.....

Usually in slabs of approximately 50 lbs. or less.

Net Prices on Metals quoted on application.

WOOD SPLIT PULLEYS

Pulleys over 36-inch diameter have six spokes instead of four.



In ordering mention diameter first, then width of face, Straight or Crown, and Bore.

B3500

Diameter Inches	WIDTH OF FACE, INCHES										
	3	4	5	6	7	8	9	10	11	12	13
3	1.90	2.00	2.10	2.25	2.40	2.60	2.85	3.10	3.35	3.60	3.85
4	2.00	2.10	2.20	2.40	2.60	2.85	3.10	3.35	3.60	3.85	4.10
5	2.10	2.20	2.40	2.60	2.85	3.10	3.35	3.60	3.85	4.10	4.40
6	2.20	2.35	2.55	2.75	3.00	3.25	3.50	3.75	4.00	4.30	4.65
7	2.30	2.45	2.65	2.85	3.10	3.35	3.60	3.85	4.15	4.50	4.85
8	2.45	2.60	2.80	3.00	3.25	3.50	3.75	4.00	4.50	4.65	5.00
9	2.60	2.80	3.00	3.25	3.50	3.75	4.00	4.30	4.65	5.00	5.40
10	2.80	3.00	3.25	3.50	3.75	4.00	4.30	4.65	5.00	5.40	5.80
11	3.00	3.25	3.50	3.75	4.00	4.30	4.65	5.00	5.40	5.80	6.20
12	3.15	3.40	3.65	3.90	4.20	4.55	4.90	5.30	5.70	6.10	6.50
13	3.30	3.55	3.80	4.10	4.45	4.80	5.20	5.60	6.00	6.40	6.80
14	3.45	3.70	4.00	4.35	4.70	5.10	5.55	6.00	6.45	6.90	7.40
15	3.60	3.90	4.25	4.60	5.00	5.45	5.90	6.35	6.80	7.30	7.80
16	3.80	4.15	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50
17	4.00	4.40	4.90	5.40	5.90	6.40	6.90	7.40	7.90	8.40	8.90
18	4.20	4.70	5.20	5.70	6.20	6.70	7.20	7.80	8.40	9.00	9.60
19	4.40	4.90	5.40	5.90	6.50	7.10	7.70	8.30	8.90	9.50	10.20
20	4.60	5.20	5.80	6.40	7.00	7.60	8.30	9.00	9.70	10.40	11.20
21	4.80	5.40	6.00	6.60	7.30	8.00	8.70	9.40	10.20	11.00	11.80
22	5.00	5.60	6.30	7.00	7.70	8.40	9.20	10.00	10.80	11.70	12.60
23	5.20	5.80	6.50	7.20	8.00	8.80	9.70	10.60	11.50	12.50	13.60
24	5.50	6.20	7.00	7.80	8.60	9.40	10.30	11.20	12.10	13.00	14.10
26	6.20	7.00	7.80	8.60	9.50	10.50	11.50	12.60	13.75	15.00	16.30
28	7.00	7.80	8.60	9.50	10.50	11.60	12.80	14.00	15.20	16.50	17.90
30	7.70	8.60	9.50	10.60	11.80	13.00	14.30	15.60	17.00	18.50	20.00
32	8.50	9.50	10.50	11.60	12.85	14.10	15.50	17.00	18.60	20.50	22.00
33	9.00	10.00	11.15	12.35	13.65	15.00	16.45	18.00	19.65	21.40	23.10
34	9.40	10.60	11.80	13.10	14.45	15.90	17.40	19.00	20.70	22.50	24.20
35	9.85	11.15	12.45	13.85	15.25	16.80	18.35	20.00	21.70	23.50	25.30
36	10.30	11.70	13.10	14.60	16.10	17.70	19.30	21.00	22.80	24.00	26.00
38	.....	12.80	14.40	16.00	17.70	19.50	21.20	23.00	24.50	26.00	28.00
40	.....	13.90	15.70	17.50	19.30	21.25	23.10	25.00	26.50	28.00	30.00
42	.....	15.00	17.00	19.00	21.00	23.00	25.00	27.00	29.00	31.00	33.00
44	.....	17.00	19.00	21.00	23.00	25.00	27.00	29.00	31.00	33.00	35.00
46	.....	19.00	21.00	23.00	25.00	27.00	29.00	31.00	33.00	36.00	38.00
48	.....	21.00	23.00	25.00	27.00	29.00	31.50	33.90	36.20	38.50	40.00
50	.....	.....	25.00	27.00	29.00	31.00	33.70	36.20	38.60	41.00	45.00
52	.....	.....	28.00	30.00	32.00	34.00	36.00	38.50	41.00	43.50	46.00
54	.....	.....	30.00	32.00	34.00	36.00	38.50	41.20	43.80	46.00	49.00
56	.....	.....	.....	35.00	37.00	39.00	41.00	43.00	46.00	49.00	52.00
58	.....	.....	.....	38.00	40.00	42.00	44.00	46.00	49.00	52.00	55.00
60	.....	.....	.....	41.00	43.00	45.00	47.00	49.00	52.00	55.00	58.00
66	.....	.....	.....	48.00	50.00	52.00	54.00	57.00	61.00	64.00	69.00
72	.....	.....	.....	54.00	56.00	58.00	62.00	66.00	70.00	75.00	80.00
78	.....	.....	.....	.....	.....	71.00	75.00	80.00	85.00	90.00	95.00
84	.....	.....	.....	.....	.....	85.00	90.00	96.00	101.00	107.00	112.00

Intermediate diameters and special large and small sizes quoted on application.



## WOOD SPLIT PULLEYS—CONTINUED

WIDTH OF FACE, INCHES

Diam. In.	14	15	16	17	18	19	20	21	22	23	24
3	4.10	4.40	4.75	.....	.....	.....	.....	.....	.....	.....	.....
4	4.40	4.75	5.10	.....	.....	.....	.....	.....	.....	.....	.....
5	4.75	5.10	5.45	.....	.....	.....	.....	.....	.....	.....	.....
6	5.00	5.35	5.70	.....	.....	.....	.....	.....	.....	.....	.....
7	5.20	5.55	5.90	.....	.....	.....	.....	.....	.....	.....	.....
8	5.40	5.80	6.20	.....	.....	.....	.....	.....	.....	.....	.....
9	5.80	6.20	6.60	7.00	7.50	8.00	8.50	.....	.....	.....	.....
10	6.20	6.60	7.00	7.50	8.00	8.60	9.20	.....	.....	.....	.....
11	6.60	7.00	7.50	8.00	8.60	9.20	9.80	.....	.....	.....	.....
12	6.90	7.40	7.90	8.50	9.10	9.70	10.40	11.10	11.80	12.60	13.40
13	7.30	7.80	8.40	9.00	9.60	10.30	11.00	11.70	12.50	13.30	14.10
14	7.90	8.50	9.10	9.70	10.40	11.10	11.80	12.60	13.40	14.20	15.00
15	8.40	9.00	9.60	10.30	11.00	11.80	12.60	13.40	14.20	15.10	16.00
16	9.00	9.60	10.30	11.00	11.80	12.60	13.40	14.20	15.10	16.00	16.90
17	9.50	10.20	11.00	11.80	12.60	13.40	14.20	15.10	16.00	16.90	17.80
18	10.30	11.10	11.90	12.70	13.50	14.30	15.20	16.10	17.00	17.90	18.80
19	11.00	11.80	12.60	13.40	14.20	15.00	15.80	16.70	17.60	18.50	19.40
20	12.00	12.90	13.80	14.70	15.60	16.50	17.50	18.50	19.50	20.50	21.50
21	12.70	13.60	14.50	15.50	16.50	17.50	18.60	19.70	20.80	21.90	23.00
22	13.50	14.50	15.50	16.60	17.70	18.80	20.00	21.20	22.40	23.60	24.80
23	14.70	15.80	17.00	18.20	19.40	20.60	21.80	23.00	24.30	25.60	26.90
24	15.30	16.50	17.70	18.90	20.20	21.50	22.80	24.10	25.40	26.80	28.20
26	17.60	19.00	20.40	21.80	23.30	24.80	26.30	27.90	29.50	31.10	32.70
28	19.40	20.90	22.40	24.00	25.60	27.20	28.80	30.40	32.00	33.60	35.30
30	21.50	23.25	25.00	26.75	28.50	30.25	32.00	33.75	35.50	37.25	39.00
32	23.80	25.60	27.40	29.20	31.00	33.00	35.00	37.00	39.00	41.00	43.00
33	24.95	26.75	28.60	30.40	32.30	34.35	36.40	38.50	40.60	42.70	44.90
34	26.10	27.90	29.80	31.70	33.60	35.70	37.80	40.00	42.20	44.40	46.80
35	27.20	29.10	31.00	32.90	34.90	37.00	39.20	41.50	43.80	46.10	48.70
36	28.00	30.00	32.00	34.00	36.00	38.00	40.00	43.00	45.00	47.00	50.00
38	30.00	32.00	34.00	36.00	38.00	41.00	43.00	46.00	48.00	51.00	54.00
40	32.00	34.00	36.00	39.00	41.00	43.00	46.00	49.00	51.00	54.00	58.00
42	35.00	37.00	39.00	41.00	44.00	46.00	49.00	52.00	55.00	58.00	62.00
44	37.00	40.00	42.00	44.00	47.00	50.00	53.00	56.00	60.00	63.00	67.00
46	40.00	43.00	45.00	48.00	51.00	54.00	57.00	61.00	65.00	68.00	73.00
48	43.00	46.00	48.00	51.00	54.00	58.00	61.00	65.00	70.00	74.00	78.00
50	46.00	49.00	51.00	54.00	58.00	62.00	65.00	70.00	75.00	79.00	84.00
52	49.00	52.00	55.00	58.00	62.00	66.00	70.00	75.00	80.00	85.00	90.00
54	52.00	55.00	59.00	62.00	66.00	70.00	75.00	80.00	85.00	90.00	95.00
56	55.00	59.00	63.00	66.00	71.00	75.00	80.00	85.00	90.00	95.00	101.00
58	59.00	62.00	67.00	71.00	75.00	80.00	85.00	90.00	95.00	100.00	106.00
60	62.00	66.00	71.00	75.00	80.00	85.00	90.00	95.00	100.00	106.00	112.00
66	73.00	78.00	83.00	88.00	93.00	98.00	103.00	109.00	115.00	122.00	129.00
72	85.00	90.00	95.00	100.00	105.00	111.00	117.00	123.00	130.00	138.00	146.00
78	100.00	105.00	110.00	116.00	121.00	127.00	133.00	140.00	147.00	155.00	164.00
84	118.00	123.00	130.00	136.00	143.00	149.00	156.00	163.00	170.00	179.00	188.00

Intermediate Diameters and special large and small sizes on application.

## TIGHT AND LOOSE WOOD PULLEYS

The loose pulley is furnished with an iron sleeve, accurately bored and fitted with oil chambers, so any style of grease or oil cups can be attached. Should there be any wear, it is a very simple and inexpensive operation to babbitt the sleeve or replace with a new one.

Price list of Iron Sleeves extra.

Face of Pulley, In.	Bore	Price	Face of Pulley, In.	Bore	Price	Face of Pulley, In.	Bore	Price
3	1 <sup>3</sup> / <sub>16</sub>	1.85	5	1 <sup>3</sup> / <sub>16</sub>	2.50	6	2 <sup>3</sup> / <sub>16</sub>	5.65
3	1 <sup>7</sup> / <sub>16</sub>	2.00	5	1 <sup>7</sup> / <sub>16</sub>	2.70	6	2 <sup>7</sup> / <sub>16</sub>	4.15
3	1 <sup>11</sup> / <sub>16</sub>	2.20	5	1 <sup>11</sup> / <sub>16</sub>	2.85	8	1 <sup>11</sup> / <sub>16</sub>	3.85
3	1 <sup>13</sup> / <sub>16</sub>	2.35	5	1 <sup>13</sup> / <sub>16</sub>	3.20	8	1 <sup>13</sup> / <sub>16</sub>	4.15
4	1 <sup>3</sup> / <sub>16</sub>	2.20	5	2 <sup>1</sup> / <sub>16</sub>	3.50	8	1 <sup>13</sup> / <sub>16</sub>	4.70
4	1 <sup>7</sup> / <sub>16</sub>	2.35	6	1 <sup>7</sup> / <sub>16</sub>	3.00	8	2 <sup>3</sup> / <sub>16</sub>	5.35
4	1 <sup>11</sup> / <sub>16</sub>	2.50	6	1 <sup>11</sup> / <sub>16</sub>	3.35	8	2 <sup>7</sup> / <sub>16</sub>	6.00
4	1 <sup>13</sup> / <sub>16</sub>	2.70	6	1 <sup>13</sup> / <sub>16</sub>	3.70	8	2 <sup>11</sup> / <sub>16</sub>	7.35



**EXTRAS, TO LIST B3500****STEP CONE PULLEYS**

Step Cones built up in one, take list of each separate size diameter with face, and add 50 per cent to the list; then subject to usual discount; built solid or split.

**TAPER CONE PULLEYS**

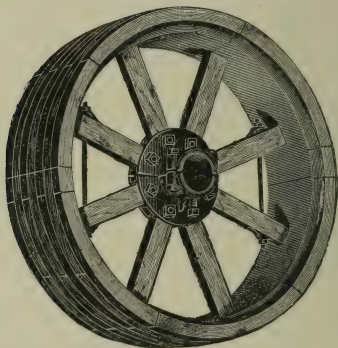
Take list of largest diameter and full width of face; subject to the regular discount.

**FLANGE PULLEYS**

Add to list as follows: Single Flange, 15 per cent; Double, 20 per cent; Triple, 25 per cent; subject to the regular discount.

**WOOD SPLIT PULLEYS**

With Malleable Iron Hubs



**B3505**

In the Malleable Iron Hub construction the great feature of objection found in all wooden hub pulleys, i. e., slippage on the shaft, has been overcome. No matter how thoroughly the stock in a wooden hub pulley may be kiln-dried, it is bound to gather a certain amount of dampness from the atmosphere, with the result that the continual swelling and shrinking that follow cause the pulley to become loose on the shaft. Can be furnished with set screws if desired.

The above take Standard Wood Split Pulley list. See B3500.

**MAIN DRIVE IRON CENTER WOOD PULLEY**

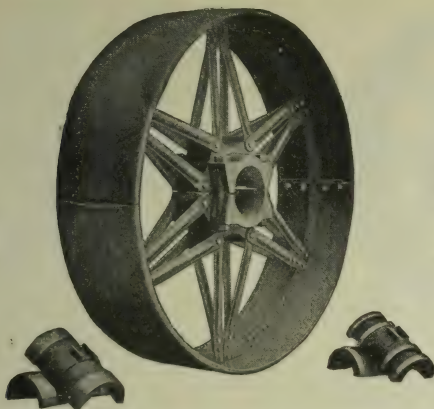
**Not Illustrated**

Main Drive Pulleys are constructed with extra heavy iron hubs, bored to the exact size of the shaft and keyseated, with set screws over the keyway. They weigh at least 75 per cent less than iron pulleys, and on account of the reduced friction in the bearings and the superior belt surface afforded by the wooden rim, will transmit 25 per cent more horse-power.

Prices quoted upon application.

# STEEL SPLIT PULLEYS

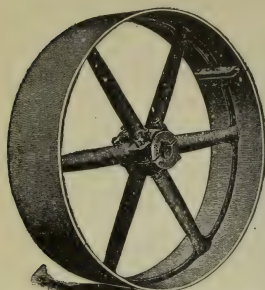
B3510



When ordering name diameter first, afterwards mention width, face, crown or straight, and bore.

Diameter Inches	WIDTH OF FACE, INCHES									
	3	4	5	6	8	10	12	14	16	18
6	3.30	3.45	3.75	4.05	.....	.....	.....	.....	.....	.....
7	3.38	3.60	3.90	4.20	.....	.....	.....	.....	.....	.....
8	3.45	3.75	4.05	4.35	4.95	5.60	.....	.....	.....	.....
9	3.60	3.90	4.20	4.50	5.10	5.75	.....	.....	.....	.....
10	3.75	4.05	4.35	4.65	5.25	5.90	6.45	.....	.....	.....
11	3.90	4.20	4.50	4.80	5.40	6.00	6.90	.....	.....	.....
12	4.20	4.63	4.80	5.33	5.78	6.45	7.65	.....	.....	.....
13	4.35	4.80	5.20	5.62	6.43	7.20	8.40	.....	.....	.....
14	4.50	5.20	5.65	6.15	7.05	8.03	9.00	.....	.....	.....
15	4.65	5.45	5.80	6.55	7.65	8.80	9.75	.....	.....	.....
16	4.95	5.75	6.10	6.90	8.25	9.45	10.50	.....	.....	.....
17	5.25	6.00	6.50	7.28	8.78	10.05	11.25	.....	.....	.....
18	5.55	6.38	7.00	7.65	9.30	10.65	12.00	.....	.....	.....
19	5.80	6.75	7.50	8.25	10.13	11.25	12.90	.....	.....	.....
20	6.00	7.50	8.10	9.00	10.73	12.00	14.25	.....	.....	.....
21	6.25	8.00	8.90	9.60	11.25	12.98	15.60	18.00	20.75	.....
22	6.50	8.55	9.50	10.28	12.00	14.10	16.80	19.30	22.20	.....
23	7.00	8.70	9.90	10.58	12.60	14.75	18.00	20.70	24.75	.....
24	7.50	8.90	10.00	10.95	13.20	15.68	19.05	22.80	27.30	32.75
26	.....	9.55	10.75	11.95	14.40	17.10	21.30	26.25	31.20	37.50
28	.....	10.80	11.85	12.90	15.45	18.15	22.90	28.50	34.50	41.50
30	.....	12.00	13.00	14.10	17.25	19.90	24.75	31.50	38.10	45.75
32	.....	13.20	14.35	15.45	19.35	22.50	26.85	35.15	41.65	50.00
34	.....	14.40	15.15	17.25	21.75	25.50	30.00	36.75	45.00	54.00
36	.....	15.90	17.75	19.50	24.00	28.65	33.75	39.75	48.60	55.50
38	.....	19.50	20.65	21.75	26.40	31.05	37.15	42.75	51.75	58.85
40	.....	21.90	22.75	24.00	28.50	33.75	40.15	46.50	55.15	62.25
42	.....	.....	.....	26.25	32.25	37.50	43.50	50.25	57.75	65.65
44	.....	.....	.....	30.20	37.10	43.13	50.00	57.80	66.40	75.50
46	.....	.....	.....	34.70	42.63	49.60	57.50	66.35	76.35	86.85
48	.....	.....	.....	39.91	49.00	57.05	66.15	76.29	87.80	99.90
50	.....	.....	.....	45.45	55.95	63.45	76.45	84.75	100.65	109.85
52	.....	.....	.....	49.10	60.20	68.25	81.85	90.80	107.55	116.95
54	.....	.....	.....	52.70	64.55	73.25	87.45	97.00	114.65	124.85
56	.....	.....	.....	55.70	67.65	76.55	91.30	101.60	119.55	130.35
58	.....	.....	.....	58.55	70.75	79.90	95.15	106.10	124.70	135.85

NOTE.—Larger sizes quoted on application.



## SINGLE BELT IRON PULLEY

B3515

Bored, Turned and Balanced, with Key Seat  
or Set Screws.

Specify first, Diameter, then Width of Face, Size  
Shaft, Crown or Straight Face, Depth and Width of  
Key-Way.

## FACE IN INCHES

Diam. in In.	3	4	5	6	7	8	9	10	11	12	14
6	1.95	2.10	2.30	2.55	....	.....	.....	.....	.....	.....	.....
7	2.10	2.25	2.50	2.75	....	.....	.....	.....	.....	.....	.....
8	2.25	2.45	2.70	2.95	3.20	3.45	.....	.....	.....	.....	.....
9	2.40	2.60	2.85	3.15	3.45	3.75	.....	.....	.....	.....	.....
10	2.55	2.75	3.05	3.40	3.70	4.05	4.40	4.75	.....	.....	.....
11	2.70	2.95	3.25	3.60	3.95	4.35	4.65	5.05	.....	.....	.....
12	2.85	3.15	3.50	3.85	4.20	4.55	4.95	5.35	5.75	6.20	.....
13	3.05	3.35	3.70	4.10	4.45	4.90	5.25	5.70	6.15	6.60	.....
14	3.25	3.55	3.90	4.35	4.70	5.20	5.60	6.10	6.55	7.05	.....
15	3.40	3.75	4.15	4.60	5.05	5.50	5.95	6.45	6.95	7.50	.....
16	3.60	3.95	4.40	4.90	5.35	5.85	6.30	6.85	7.40	8.00	.....
17	3.80	4.20	4.70	5.20	5.70	6.20	6.75	7.30	7.90	8.50	.....
18	4.00	4.45	4.95	5.50	6.05	6.60	7.15	7.75	8.40	9.10	.....
19	4.25	4.70	5.25	5.85	6.45	7.05	7.65	8.30	9.00	9.75	.....
20	4.45	4.95	5.55	6.20	6.85	7.50	8.15	8.85	9.60	10.40	.....
21	4.70	5.25	5.85	6.55	7.25	7.95	8.65	9.40	10.20	11.05	.....
22	4.90	5.55	6.15	6.90	7.65	8.40	9.15	9.95	10.80	11.70	.....
23	5.15	5.80	6.50	7.25	8.05	8.85	9.65	10.50	11.45	12.40	.....
24	5.40	6.10	6.85	7.65	8.45	9.30	10.20	11.10	12.10	13.15	15.70
25	5.70	6.50	7.25	8.10	8.95	9.90	10.85	11.85	12.90	14.05	16.65
26	6.00	6.90	7.65	8.60	9.45	10.55	11.50	12.60	13.75	15.00	17.65
27	6.35	7.30	8.15	9.05	10.00	11.10	12.20	13.35	14.60	15.90	18.60
28	6.75	7.70	8.50	9.50	10.60	11.70	12.90	13.10	15.45	16.85	19.55
29	7.25	8.10	9.00	10.00	11.15	12.35	13.60	14.90	16.30	17.70	20.55
30	7.60	8.55	9.45	10.55	11.75	13.00	14.30	15.75	17.15	18.60	21.55
31	8.05	8.95	9.95	11.10	12.35	13.70	15.10	16.55	18.05	19.55	22.00
32	8.45	9.40	10.45	11.65	12.95	14.40	15.90	17.40	19.00	20.55	23.70
33	8.90	9.90	11.00	12.25	13.60	15.05	16.70	18.25	19.90	21.50	24.80
34	9.40	10.40	11.50	12.90	14.35	15.85	17.55	19.10	20.85	22.50	25.90
35	9.90	10.90	12.10	13.50	15.00	16.60	18.25	19.95	21.75	23.50	27.00
36	10.40	11.40	12.65	14.10	15.70	17.35	19.10	20.85	22.70	24.50	28.10
38	....	12.55	13.95	15.60	17.95	19.05	20.90	22.80	24.75	26.65	30.50
40	....	13.70	15.30	17.10	18.90	20.80	22.75	24.75	26.80	28.80	32.90
42	....	14.90	16.70	18.60	20.55	22.55	24.60	26.70	28.85	31.00	35.30
44	....	16.25	18.20	20.25	22.30	24.45	26.60	28.80	31.10	33.40	37.90
46	....	17.65	19.70	21.85	24.05	26.35	28.60	30.95	33.40	35.80	40.60
48	....	19.00	21.20	23.50	25.85	28.25	30.65	33.15	35.70	38.20	43.30
50	....	....	22.80	25.30	27.75	30.25	32.80	35.45	38.10	40.80	46.20
52	....	....	24.50	27.10	29.65	32.30	35.00	37.75	40.50	43.40	49.20
54	....	....	26.20	28.90	31.65	34.40	37.20	40.05	43.00	46.00	52.20
56	....	....	....	30.85	33.55	36.30	39.25	42.25	45.45	48.75	55.40
58	....	....	....	32.80	35.50	38.35	41.35	44.55	47.95	51.50	58.60
60	....	....	....	34.80	37.50	40.35	43.45	46.85	50.45	54.20	61.80
62	....	....	....	36.70	39.70	42.85	45.85	49.75	53.55	57.40	65.40
64	....	....	....	38.60	41.90	45.35	48.30	52.75	56.65	60.70	69.10
66	....	....	....	40.50	44.20	47.95	51.80	55.75	59.80	64.00	72.70
68	....	....	....	42.80	46.70	50.60	54.60	58.70	62.90	67.30	76.30
70	....	....	....	45.10	49.20	53.30	57.40	61.70	66.05	70.60	80.05

## DOUBLE-BELT IRON PULLEYS

B3516

Bored, Turned and Balanced, with Key Seat or Set Screws

State first Diameter of Pulley, then Width of Face and Size of Shaft, Crown or Straight Face. Depth and Width of Key-way.

For 7 in., 9 in., 11 in., 13 in., 15 in., 17 in., 19 in., 21 in. and 23 in. Face, see note.

Diam. in In.	*FACE IN INCHES. (For Odd Inch face, see Note.)									
	6	8	10	12	14	16	18	20	22	24
12	5.25	6.35	7.55	8.75	10.10	11.50	13.00	.....	.....	.....
13	5.60	6.80	8.10	9.40	10.85	12.40	14.00	15.70	.....	.....
14	5.95	7.20	8.60	10.00	11.60	13.25	15.00	16.80	.....	.....
15	6.30	7.65	9.15	10.70	12.35	14.15	16.00	17.90	.....	.....
16	6.70	8.20	9.90	11.45	13.25	15.15	17.15	19.15	.....	.....
17	7.15	8.75	10.45	12.25	14.15	16.15	18.25	20.40	.....	.....
18	7.60	9.30	11.10	13.05	15.10	17.20	19.40	21.70	.....	.....
19	8.10	9.95	11.95	14.00	16.25	18.50	20.90	23.35	.....	.....
20	8.60	10.60	12.80	15.00	17.40	19.80	22.40	25.00	27.70	30.60
21	9.10	11.30	13.60	16.00	18.55	21.10	23.90	26.65	29.60	32.70
22	9.60	12.00	14.50	17.00	19.70	22.40	25.40	28.30	31.50	34.80
23	10.10	12.70	15.35	18.00	20.85	22.75	26.90	29.95	33.45	36.90
24	10.65	13.40	16.20	19.00	22.00	25.10	28.40	31.70	35.40	39.00
25	11.25	14.15	17.10	20.05	23.25	26.60	30.10	33.60	37.45	41.20
26	11.90	14.90	18.00	21.10	24.55	28.10	31.80	35.55	39.75	43.45
27	12.50	15.65	18.90	22.20	25.80	29.60	33.55	37.50	41.70	45.70
28	13.15	16.40	19.80	23.30	27.10	31.10	35.25	39.45	43.75	47.90
29	13.85	17.15	20.70	24.40	28.40	32.60	37.00	41.40	45.80	50.15
30	14.55	18.00	21.60	25.50	29.70	34.20	38.70	43.25	47.80	52.40
31	15.30	19.00	22.70	26.75	31.15	35.80	40.50	45.35	49.90	54.60
32	16.05	19.85	23.85	28.00	32.65	37.45	42.30	47.45	52.00	56.85
33	16.80	20.80	24.95	29.25	34.10	39.05	44.10	49.55	54.10	59.05
34	17.60	21.75	26.10	30.50	35.60	40.70	45.90	51.65	56.20	61.30
35	18.40	22.75	27.20	31.80	37.05	42.35	47.70	53.75	58.30	63.65
36	19.20	23.70	28.30	33.10	38.55	44.00	49.50	55.90	60.40	65.80
38	21.05	25.90	30.80	35.95	41.65	49.15	53.50	59.80	65.05	70.85
40	22.90	28.10	33.30	38.75	44.80	52.65	57.50	63.70	69.70	75.90
42	24.80	30.30	35.85	41.60	47.95	54.40	61.00	67.60	74.30	81.00
44	26.85	32.70	38.65	44.90	51.60	58.50	65.50	72.60	79.50	86.65
46	28.90	35.15	41.55	48.20	55.30	62.60	70.00	77.40	84.80	92.30
48	31.00	37.65	44.45	51.50	59.00	66.70	74.50	82.30	90.10	98.00
50	33.30	40.30	47.45	54.80	62.70	70.85	79.15	87.40	95.70	104.10
52	35.65	43.00	50.50	58.15	66.45	75.05	83.80	92.50	101.30	110.30
54	37.90	45.70	53.60	61.50	70.25	79.25	88.50	97.70	107.00	116.50
56	40.65	48.50	56.60	65.00	74.35	83.55	93.50	103.25	113.10	123.15
58	43.25	51.30	59.65	68.50	78.45	87.85	98.50	108.85	119.25	129.80
60	46.00	54.10	62.75	72.00	82.55	92.15	103.50	114.45	125.45	136.50
62	48.30	57.10	66.30	76.00	86.95	97.25	108.70	120.35	131.85	143.20
64	50.60	60.10	69.90	80.00	91.35	102.35	113.85	126.25	138.30	150.90
66	53.00	63.15	73.50	84.00	95.75	107.55	119.50	132.15	144.80	157.50
68	55.70	66.25	77.10	88.20	100.25	112.55	125.10	138.35	151.50	165.00
70	58.40	69.25	80.70	92.40	104.85	117.65	130.80	144.55	158.25	172.50
72	61.00	72.55	84.30	96.50	109.45	122.75	136.50	150.60	165.00	179.50
74	.....	75.75	88.50	101.00	114.45	128.25	142.50	157.10	172.00	187.00
76	.....	79.05	92.70	105.50	119.45	133.75	148.45	163.70	179.00	194.50
80	.....	85.95	99.85	114.30	129.50	144.95	160.80	177.10	193.40	210.00
96	.....	117.10	134.75	153.00	172.10	191.75	212.50	233.00	254.50	276.00

\* Intermediate widths, add one-half the difference between next smaller and larger widths, to price of the smaller.



## CAST-IRON PULLEYS, CONTINUED

Additional price to be added to list price for **Finished Split Pulleys**

Diameter in inches	Face in inches	Price	Diameter in inches	Face in inches	Price	Diameter in inches	Face in inches	Price
8 to 10	2 to 3	1.30	24 to 30	7 to 10	5.40	48 to 60	7 to 10	13.00
	4 to 6	1.75		11 to 14	7.25		11 to 14	18.00
	7 to 10	2.15		15 to 20	10.00		15 to 20	25.00
	11 to 14	3.10		21 to 30	14.00		21 to 30	34.50
	15 to 20	4.00					31 to 40	48.00
11 to 18	2 to 3	1.50	31 to 36	3 to 4	4.50	61 to 84	7 to 10	20.00
	4 to 6	2.20		5 to 6	5.60		11 to 14	26.00
	7 to 10	2.85		7 to 10	6.75		15 to 20	35.00
	11 to 14	4.00		11 to 14	9.80		21 to 30	48.00
	15 to 20	5.25		15 to 20	13.00		31 to 40	64.00
19 to 23	3 to 4	2.65	37 to 47	3 to 4	6.50	85 to 120	11 to 14	38.00
	5 to 6	3.40		5 to 6	7.50		15 to 20	53.50
	7 to 10	4.05		7 to 10	9.90		21 to 30	70.00
	11 to 14	5.60		11 to 14	13.50		31 to 40	90.00
	15 to 20	7.30		15 to 20	18.00	121 to 144	11 to 14	52.00
24 to 30	21 to 30	11.00	48 to 60	21 to 30	27.00		15 to 20	72.00
	3 to 4	3.60		31 to 40	37.00		21 to 30	96.00
	5 to 6	4.40					31 to 40	124.00

Pulleys above 50-inch diameter will be furnished in double belt only.

Additional price to be added to the list price for **Tight and Loose Pulleys per pair, and Finished Flange Pulleys each.**

Diameter in inches	Price Tight and Loose Pulleys	Price Flanged Pulleys	Diameter in inches	Price Tight and Loose Pulleys	Price Flanged Pulleys
6 to 8	1.60	4.65	49 to 52	9.30	33.00
9 to 10	1.95	5.20	53 to 56	10.00	36.30
11 to 12	2.30	5.75	57 to 60	10.70	40.70
13 to 14	2.65	6.30	61 to 66	11.70	46.20
15 to 16	3.00	7.15	67 to 72	12.70	51.70
17 to 18	3.30	8.00	73 to 78	13.70	57.20
19 to 20	3.70	8.80	79 to 84	14.70	62.70
21 to 22	4.05	9.90	85 to 90	15.70	68.20
23 to 24	4.40	11.00	91 to 96	16.70	73.70
25 to 26	4.75	12.10	97 to 102	17.70	79.70
27 to 28	5.10	13.75	103 to 108	18.70	85.80
29 to 30	5.45	15.40	109 to 114	19.70	91.30
31 to 32	5.80	17.05	115 to 120	20.70	96.80
33 to 34	6.15	18.70	121 to 126	21.70	102.30
35 to 36	6.50	20.35	127 to 132	22.70	107.80
37 to 40	7.20	23.10	133 to 138	23.70	113.80
41 to 44	7.90	26.40	139 to 144	24.70	119.80
45 to 48	8.60	29.70	.....	.....	.....

Pulleys with one flange only one-half that given above.

Pulleys with three flanges one-half more than given above.

## Maximum Bores for Standard Pulleys

Diam. Pulley..... inches	6 to 9	10 to 15	16 to 20	21 to 30	31 to 42	43 to 48	49 to 60
Bore..... inches	2 $\frac{1}{16}$	2 $\frac{1}{8}$	3 $\frac{1}{16}$	3 $\frac{1}{8}$	4 $\frac{1}{16}$	4 $\frac{1}{8}$	5 $\frac{1}{8}$
For each $\frac{1}{4}$ in. larger bore, or "fraction Add per cent. .... }	10	10	10	10	5	5	5

Pulleys with bores larger than the maximum will be furnished in double belt only.

# CAST-IRON FRICTION CLUTCH PULLEYS

B3520

Note.—Additional charge for high speed as follows: Over 350 revolutions, 10 per cent; over 600 revolutions 20 per cent. When a clutch pulley is intended for high speed, to get the benefit of our guaranty, that fact must be mentioned in the order. High speed clutch pulleys should have bronze sleeves.



Diameter	Face	PRICE		Length of Hub	SPACE ON SHAFT		Diameter	Face	PRICE		Length of Hub	SPACE ON SHAFT	
		Single Belt	Double Belt		Single Belt	Double Belt			Single Belt	Double Belt		Single Belt	Double Belt
8	3	24.00	27.00	5	16		22	8	47.50	53.45	7	19 1/4	22
	4	25.50	28.70	5	16			10	52.30	58.85	9	21 1/4	24
	5	27.00	30.40	6	17			12	57.00	64.15	10	22 3/4	26 1/2
	6	28.50	32.05	6	17			4	40.20	45.25	6	17 1/2	17 1/2
	8	30.50	34.30	6	17		24	5	44.40	49.95	6	17 1/2	18 1/4
10	3	25.00	28.10	5	16			6	49.00	55.15	6	17 1/2	18 1/4
	4	26.50	29.80	5	16			8	54.20	61.00	7	19 1/4	22
	5	28.00	31.50	6	17			10	59.80	67.30	9	21 1/4	24
	6	30.00	33.75	6	17			12	64.60	72.80	10	25	26 1/2
12	8	32.00	36.00	6	17			14	69.40	78.10	11	25	27 1/2
	3	25.50	28.70	5	16	16	26	4	43.70	49.15	6	17 1/2	18 1/4
	4	27.50	30.95	5	16	16		5	49.40	55.60	6	17 1/2	18 1/4
	5	28.70	32.30	6	17	17 1/2		6	55.10	62.00	6	17 1/2	18 1/4
	6	30.80	34.65	6	17	17 1/2		8	60.80	68.40	7	19 1/4	22
14	8	34.20	38.50	6	17 1/2	17 1/2		10	67.50	75.95	9	21 1/2	25 1/2
	3	28.00	31.50	5	16	16	28	12	73.00	82.80	10	25	26 1/2
	4	29.20	32.85	6	17	17 1/2		14	78.90	88.75	11	26	27 1/2
	5	30.80	34.65	6	17	17 1/2		4	48.50	54.55	6	17 1/2	18 1/4
	6	33.80	38.05	6	17 1/2	17 1/2		5	53.20	59.85	6	17 1/2	18 1/4
16	8	37.00	41.65	6	17 1/2	18 1/4		6	59.50	66.95	6	17 1/2	18 1/4
	10	39.70	44.65	7	18 1/2	19 1/4	30	8	63.60	71.55	7	19 1/4	22
	3	29.50	33.20	6	17	17 1/2		10	69.40	78.10	9	24	25 1/2
	4	31.30	35.25	6	17	17 1/2		12	75.00	84.40	10	25	26 1/2
	5	33.25	37.40	6	17	17 1/2		14	81.70	91.90	11	26	29
18	6	37.00	41.65	6	17 1/2	17 1/2	32	5	56.00	63.00	6	17 1/2	18 1/4
	8	41.00	46.15	6	17 1/2	18 1/4		6	60.80	68.40	7	19 1/4	22
	10	42.75	48.10	9	20 1/2	21 1/4		8	66.50	74.80	8	20 1/4	23
	12	46.50	52.30	10	22 1/4	25		10	73.20	82.35	9	21 1/4	25 1/2
	3	30.70	34.55	6	17	17 1/2		12	79.40	89.35	10	25	26 1/2
20	4	32.70	36.80	6	17	17 1/2	34	14	88.40	99.45	11	26	29
	5	34.20	38.50	6	17 1/2	17 1/2		16	94.60	106.45	12	28 1/2	31
	6	38.00	42.70	6	17 1/2	18 1/4		4	55.10	62.00	6	17 1/2	18 1/4
	8	41.80	47.05	6	17 1/2	18 1/4		5	59.80	67.30	6	17 1/2	18 1/4
	10	45.60	51.30	9	21 1/4	24		6	65.50	73.70	7	19 1/4	22
22	12	50.10	56.35	10	22 1/4	25	36	8	70.30	79.10	8	20 1/4	23
	3	33.60	37.80	6	17	17 1/2		10	77.00	86.65	9	24	25 1/2
	4	33.60	37.80	6	17	17 1/2		12	84.00	94.50	10	26 1/2	28
	5	35.90	40.40	6	17 1/2	18 1/4		14	92.00	104.20	11	27 1/2	29
	6	40.00	45.00	6	17 1/2	18 1/4		16	100.70	113.30	12	28 1/2	31
24	8	44.60	50.20	6	17 1/2	18 1/4	38	4	57.80	65.55	6	17 1/2	18 1/4
	10	49.40	55.60	9	21 1/4	24		5	63.20	71.10	6	17 1/2	18 1/4
	12	53.20	59.85	10	22 1/4	25		6	69.00	77.65	7	19 1/4	22
	4	36.00	40.50	6	17 1/2	17 1/2		8	74.10	83.35	8	20 1/4	24 1/2
	5	39.40	44.35	6	17 1/2	18 1/4		10	83.60	94.05	9	24	25 1/2
26	6	42.20	47.50	6	17 1/2	18 1/4		12	90.20	101.50	10	25	28

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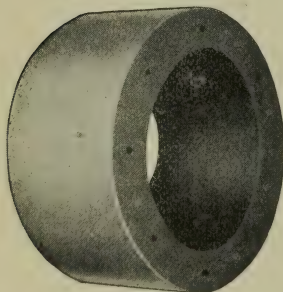
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Diameter	Face	PRICE		Length of Hub	SPACE ON SHAFT		Diameter	Face	PRICE		Length of Hub	SPACE ON SHAFT	
		Single Belt	Double Belt		Single Belt	Double Belt			Single Belt	Double Belt		Single Belt	Double Belt
34	14	100.00	112.50	11	27½	29	36	10	92.20	103.75	9	24	25½
	16	107.80	121.00	12	30	31		12	98.80	111.15	10	25	28
36	4	63.20	71.10	6	17½	18¼		14	107.60	121.05	11	27½	30
	5	70.80	79.65	6	18¼	21		16	116.00	130.50	12	30	31
	6	77.00	86.65	7	19¼	22		18	126.40	142.20	14	32	33
	8	82.60	92.95	8	23	24½		20	144.40	162.45	14	34	36

## PAPER FRICTIONS COMPLETE AND FILLERS ONLY FOR SAW MILLS

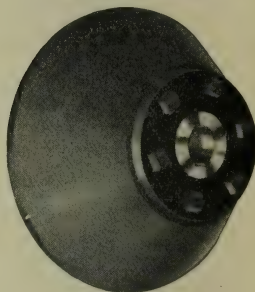
Spur Bevel or Miter

Feed Friction Filler  
without Flanges



B3525

Miter Friction  
with Flanges



B3526

When ordering, always state whether wanted complete with flanges, or whether Filler only is wanted.

Our Paper Frictions are made solid, bored and turned perfectly true to any desired size or shape, spur, bevel, or miter face. Bolt holes in Rolls or Fillers drilled to specifications.

When ordering Spur Paper Frictions with flanges, state diameter and face of paper, bore of hub, and size of key seat. For Bevels or Miters, state large diameter, width of face and degree of angle of paper, bore of hub, and size of key seat. The angle to be measured is that formed by the large diameter and face of the paper filler.

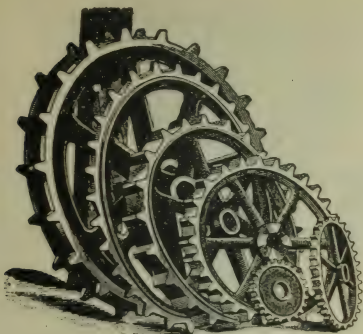
When inconvenient to measure the angle, give also the small diameter and thickness of paper between flanges.

When ordering Paper Friction Rolls or Fillers, give dimensions, and state number and size of bolts, also give either the radius or the diameter of circle on which bolt holes are to be drilled, measuring to centre of holes. Send paper pattern when the holes in flanges have not been accurately spaced.

Friction Fillers are made of Straw Fibre, Tarred Fibre, or Leather Fibre (customer's choice) but unless otherwise specified Straw Fibre is furnished.

Backing Frictions, with flanges to run loose on shafts, are made self-oiling. Fillers for renewing Saw Mill Feed Frictions are made solid, bored and turned to desired sizes, with bolt holes drilled, ready to place in flanges.

Prices Quoted on Application.



## SPROCKET WHEEL

B3530

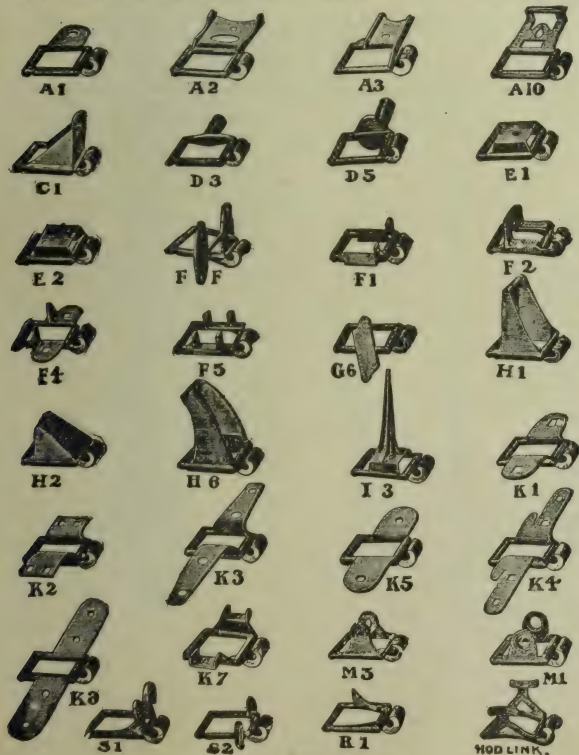
Prices on application.

When ordering state size of chain (number), \*Pitch diameter of wheel, Number of teeth on wheel, Size of bore, and if they are to be Set-Screwed or Key-Seated.

Split Wheels can be furnished at special price.

Sprocket Wheels can be furnished with Friction or Jaw Clutches at special price.

## ATTACHMENTS AS USUALLY MADE FOR CHAIN BELTING



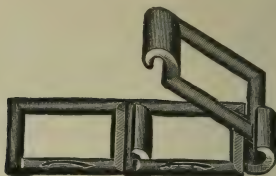
This cut shows only a few of the more common styles. Can furnish others for special requirements.

Prices quoted on application.

\* Note.— The pitch diameter of wheel is measured about half way between bottom and top of sprocket or tooth.



## DETACHABLE LINK CHAIN



B3535

This chain is standard the world over. It is interchangeable with all standard links, and works upon standard sprocket wheels of corresponding numbers.

## STANDARD LIST

Adopted Jan. 1, 1907

Number	Price Per Foot	Couplers Per Pair	Links per Foot	Pitch in Inches	Approximate Working Strain in Pounds	Appr. Equiv. in Leather Belting Inches
25	.11	.11	13.3	.902	75	1
32	.11	.14	10.4	1.153	150	1½
33	.11	.13	8.6	1.395	200	2
34	.11	.13	8.6	1.395	225	2½
35	.11	.16	7.4	1.621	250	2½
42	.12	.16	8.8	1.363	300	3
45	.11	.16	7.4	1.621	350	3½
51	.17	.16	10.4	1.153	375	3½
52	.18	.16	8	1.5	500	4
55	.16	.16	7.4	1.621	450	4
57	.18	.19	5.2	2.307	600	6
62	.22	.22	7.3	1.643	650	6½
66	.23	.22	6	2.	700	6½
67	.23	.22	5.2	2.307	700	7
75	.24	.19	4.6	2.609	750	7½
77	.25	.22	5.2	2.307	800	8
78	.34	.25	4.6	2.609	1,000	10
83	.35	.32	3	4.	1,200	12
85	.44	.44	3	4.	1,300	9
88	.43	.28	4.6	2.609	1,200	8
93	.49	.44	3	4.	1,600	10
95	.53	.54	3	4.	1,600	10
103	.67	.58	3.93	3.056	1,800	12
105	.49	.....	2	6.	1,500	10
108	.63	.79	2.55	4.706	1,800	12
110	.74	.92	2.55	4.706	2,000	13
114	.85	.84	3.7	3.243	2,000	13
122	1.13	1.58	2	6.	2,200	15
124	1.03	1.19	3	4.	2,250	17
146	1.02	.....	2	6.	2,800	19

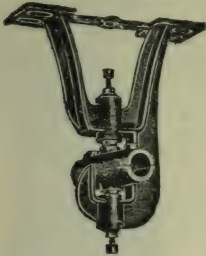
The above prices of attachments are for A1, A2, A3, A7, A11, C1, E1, E2, F2, G1, G6, H1, H2, K1, K2, M1, M3, R1, R3, S1, and S2, and as they are now made for the respective chains. Other attachments will be furnished at special prices.

The following additional sizes are carried in stock at factory: Nos. 36½, 44, 48, 50, 54, 76½, 115, 117.

# ADJUSTABLE BALL AND SOCKET DROP HANGERS

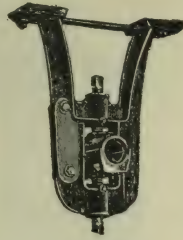
## WITH CAPILLARY OILING BABBITTED BEARINGS

SINGLE BRACE



B3540

DOUBLE BRACE



B3541

Our Hanger, as illustrated above, is of a design that is much appreciated by millwrights and mechanics generally, due to our preservation of the true ball and socket principle, as well as the embodiment of the open side feature. After the upper and lower plungers are permanently adjusted, a jam set-screw holds the alignment perfectly firm. The shaft may be placed into position easily and quickly, without resorting to the use of hoists, lashings, etc., as are necessary where hangers open at the bottom or end.

Size of Shaft	Brace	DROP IN INCHES									
		8	10	12	14	16	18	20	24	30	36
$\frac{3}{8}$ , $1\frac{1}{8}$ , 1	Single	4.50	4.65	4.85	5.10	5.20	5.60	6.05	.....	.....	.....
	Double	4.80	4.95	5.15	5.40	5.50	5.90	6.35	.....	.....	.....
$1\frac{1}{8}$ , $1\frac{3}{8}$ , $1\frac{1}{2}$	Single	4.65	4.80	5.00	5.25	5.35	5.75	6.20	.....	.....	.....
	Double	4.95	5.10	5.30	5.55	5.65	6.05	6.50	.....	.....	.....
$1\frac{1}{8}$ and $1\frac{1}{2}$	Single	5.35	5.50	5.70	5.95	6.05	6.45	6.90	.....	.....	.....
	Double	5.65	5.90	6.10	6.35	6.45	6.85	7.30	.....	.....	.....
$1\frac{1}{8}$ " $1\frac{3}{4}$	Single	5.60	5.75	5.95	6.20	6.30	6.70	7.15	.....	.....	.....
	Double	6.00	6.15	6.35	6.60	6.70	7.10	7.55	.....	.....	.....
$1\frac{1}{8}$ " 2	Single	8.25	8.75	8.90	9.20	9.65	9.70	10.20	11.05	.....	.....
	Double	8.75	9.25	9.40	9.70	10.15	10.20	10.70	11.55	.....	.....
$2\frac{3}{8}$ " $2\frac{1}{4}$	Single	.....	10.50	10.65	11.15	11.75	12.20	13.10	14.80	17.15	.....
	Double	.....	11.05	11.20	11.70	12.30	12.75	13.65	15.35	17.70	.....
$2\frac{1}{8}$ " $2\frac{1}{2}$	Single	.....	11.10	11.25	11.75	12.35	12.80	13.70	15.40	17.75	.....
	Double	.....	11.65	11.80	12.30	12.90	13.35	14.25	15.95	18.30	.....
$2\frac{1}{8}$ " $2\frac{3}{4}$	Single	.....	13.25	13.75	13.85	15.15	16.25	17.30	19.55	21.60	22.35
	Double	.....	14.05	14.55	14.65	15.95	17.05	18.10	20.35	22.40	23.15
$2\frac{1}{8}$ " 3	Single	.....	15.90	16.50	16.60	17.90	19.00	20.05	22.30	24.35	25.10
	Double	.....	16.70	17.30	17.40	18.70	19.80	20.85	23.10	25.15	25.90
$3\frac{3}{8}$ " $3\frac{1}{4}$	Single	.....	.....	24.20	24.95	25.45	26.85	28.75	31.95	35.05	37.55
	Double	.....	.....	25.25	26.00	26.50	27.90	29.80	33.00	36.10	38.60
$3\frac{1}{8}$ " $3\frac{1}{2}$	Single	.....	.....	26.55	27.30	27.80	29.20	31.10	34.30	37.40	39.90
	Double	.....	.....	27.60	28.35	28.85	30.25	32.15	35.35	38.45	40.95
$3\frac{1}{8}$ " 3%	Single	.....	.....	30.80	31.30	33.45	34.20	36.10	41.35	44.80	49.35
	Double	.....	.....	32.00	32.50	34.65	35.40	37.30	42.55	46.00	50.55
$3\frac{1}{8}$ " 4	Single	.....	.....	32.55	33.05	35.20	35.95	37.85	43.10	46.55	51.10
	Double	.....	.....	33.75	34.25	36.40	37.15	39.05	44.30	47.75	52.30
$4\frac{3}{8}$ " $4\frac{1}{4}$	Single	.....	.....	.....	.....	37.85	40.10	42.35	47.60	50.40	56.35
	Double	.....	.....	.....	.....	39.40	41.65	43.90	49.15	51.95	57.90
$4\frac{1}{8}$ " $4\frac{1}{2}$	Single	.....	.....	.....	.....	40.50	42.75	45.00	50.25	53.05	59.00
	Double	.....	.....	.....	.....	42.05	44.30	46.55	51.80	54.60	60.55
$4\frac{1}{8}$ " 4%	Single	.....	.....	.....	.....	47.75	51.45	53.70	57.30	61.50	69.60
	Double	.....	.....	.....	.....	49.70	53.40	55.65	59.25	63.45	71.55
$4\frac{1}{8}$ " 5	Single	.....	.....	.....	.....	52.85	56.55	58.80	62.40	66.60	74.70
	Double	.....	.....	.....	.....	54.80	58.50	60.75	64.35	68.55	76.65

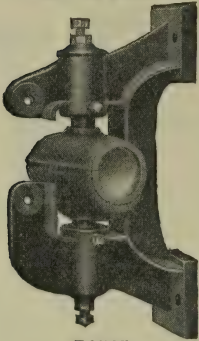
Ring Oiling Bearings can be furnished on special order.

ADJUSTABLE  
BALL AND SOCKET POST HANGERS

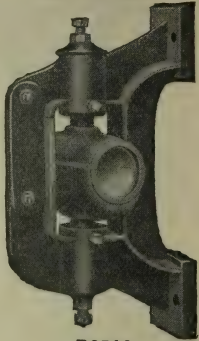
With Capillary Oiling Babbitted Bearings

SINGLE BRACE

DOUBLE BRACE



B3545



B3546

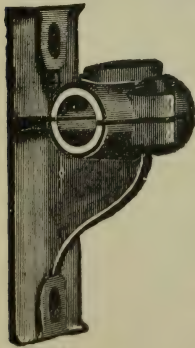
These Post Hangers take either our Capillary or Ring Oiling Bearings, which are interchangeable in both. They are heavy and substantial, have the true ball and socket movement, are carefully finished, and are in every respect superior appliances. All bearings carefully **bored** to exact size after babbitting.

SINGLE BRACE				DOUBLE BRACE			
Size	Price	Size	Price	Size	Price	Size	Price
1 <sup>3</sup> / <sub>16</sub>	5.60	3 <sup>3</sup> / <sub>16</sub>	26.25	1 <sup>3</sup> / <sub>16</sub>	5.95	3 <sup>3</sup> / <sub>16</sub>	27.30
1 <sup>7</sup> / <sub>16</sub>	5.95	3 <sup>7</sup> / <sub>16</sub>	28.60	1 <sup>7</sup> / <sub>16</sub>	6.30	3 <sup>7</sup> / <sub>16</sub>	29.65
1 <sup>11</sup> / <sub>16</sub>	6.20	3 <sup>11</sup> / <sub>16</sub>	32.85	1 <sup>11</sup> / <sub>16</sub>	6.55	3 <sup>11</sup> / <sub>16</sub>	34.05
1 <sup>13</sup> / <sub>16</sub>	6.55	3 <sup>13</sup> / <sub>16</sub>	34.60	1 <sup>13</sup> / <sub>16</sub>	9.05	3 <sup>13</sup> / <sub>16</sub>	35.80
2 <sup>3</sup> / <sub>16</sub>	11.20	4 <sup>3</sup> / <sub>16</sub>	38.00	2 <sup>3</sup> / <sub>16</sub>	11.75	4 <sup>3</sup> / <sub>16</sub>	39.55
2 <sup>7</sup> / <sub>16</sub>	11.80	4 <sup>7</sup> / <sub>16</sub>	40.65	2 <sup>7</sup> / <sub>16</sub>	12.35	4 <sup>7</sup> / <sub>16</sub>	42.20
2 <sup>11</sup> / <sub>16</sub>	14.80	4 <sup>11</sup> / <sub>16</sub>	51.75	2 <sup>11</sup> / <sub>16</sub>	15.60	4 <sup>11</sup> / <sub>16</sub>	53.70
2 <sup>13</sup> / <sub>16</sub>	17.55	4 <sup>13</sup> / <sub>16</sub>	56.85	2 <sup>13</sup> / <sub>16</sub>	18.35	4 <sup>13</sup> / <sub>16</sub>	58.80

Ring Oiling Bearings can be furnished on special order.

RIGID POST HANGERS OR BRACKET  
BOXES

Babbitted Bearings



B3548

Size of Shaft	Price	Size of Shaft	Price
1 <sup>7</sup> / <sub>16</sub>	3.80	3 <sup>3</sup> / <sub>16</sub>	11.60
1 <sup>11</sup> / <sub>16</sub>	4.10	3 <sup>7</sup> / <sub>16</sub>	15.75
1 <sup>13</sup> / <sub>16</sub>	5.20	3 <sup>11</sup> / <sub>16</sub>	20.00
2 <sup>3</sup> / <sub>16</sub>	6.25	3 <sup>13</sup> / <sub>16</sub>	25.00
2 <sup>7</sup> / <sub>16</sub>	7.20	4 <sup>7</sup> / <sub>16</sub>	29.00
2 <sup>11</sup> / <sub>16</sub>	8.60	4 <sup>11</sup> / <sub>16</sub>	34.00
2 <sup>13</sup> / <sub>16</sub>	10.25	4 <sup>13</sup> / <sub>16</sub>	40.00

## BALL AND SOCKET PILLOW BLOCKS

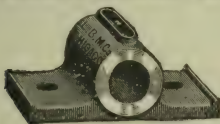


B3550

CAPILLARY OILING				RING OILING			
Size of Shaft	Price	Size of Shaft	Price	Size of Shaft	Price	Size of Shaft	Price
1 $\frac{3}{16}$	4.50	3 $\frac{3}{16}$	20.50	1 $\frac{7}{16}$	5.00	3 $\frac{7}{16}$	23.00
1 $\frac{1}{8}$	4.75	3 $\frac{7}{16}$	22.50	1 $\frac{1}{2}$	5.25	3 $\frac{1}{2}$	29.00
1 $\frac{1}{4}$	5.00	3 $\frac{1}{2}$	28.00	1 $\frac{5}{8}$	7.75	3 $\frac{5}{8}$	32.00
1 $\frac{3}{8}$	7.50	3 $\frac{3}{4}$	31.00	2 $\frac{3}{16}$	10.75	4 $\frac{3}{16}$	46.00
2 $\frac{3}{16}$	10.50	4 $\frac{3}{16}$	45.00	2 $\frac{1}{2}$	11.75	4 $\frac{1}{2}$	49.00
2 $\frac{1}{4}$	11.50	4 $\frac{1}{2}$	48.00	2 $\frac{1}{4}$	14.50	4 $\frac{1}{4}$	53.00
2 $\frac{1}{2}$	14.00	4 $\frac{3}{4}$	52.00	2 $\frac{3}{8}$	15.50	4 $\frac{3}{8}$	56.00
2 $\frac{3}{4}$	15.00	4 $\frac{15}{16}$	55.00	3 $\frac{3}{16}$	21.00		

## RIGID PILLOW BLOCKS

With Standard Babbitted Bearings

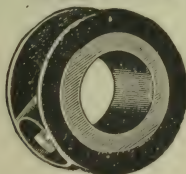


B3551

Size	Price	Size	Price	Size	Price	Size	Price
1 $\frac{1}{8}$	1.30	2 $\frac{3}{16}$	4.00	3 $\frac{7}{16}$	11.00	5 $\frac{7}{16}$	33.60
1 $\frac{1}{4}$	1.60	2 $\frac{1}{2}$	4.90	3 $\frac{1}{2}$	13.30	5 $\frac{1}{2}$	48.40
1 $\frac{3}{8}$	2.10	2 $\frac{3}{4}$	6.10	3 $\frac{3}{4}$	16.60	6 $\frac{3}{8}$	56.50
1 $\frac{1}{2}$	2.65	2 $\frac{15}{16}$	7.80	4 $\frac{1}{8}$	21.80	6 $\frac{1}{2}$	63.80
1 $\frac{3}{4}$	3.40	3 $\frac{1}{8}$	9.40	4 $\frac{1}{4}$	26.40	7 $\frac{1}{8}$	80.00

## SET COLLARS

PLAIN COLLAR



B3553

\*PRICE LIST PLAIN COLLARS

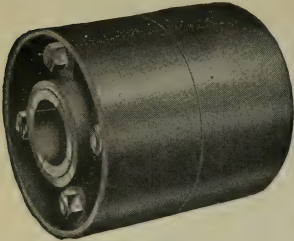
Size	Each	Size	Each	Size	Each	Size	Each
1 $\frac{1}{8}$	.62	1 $\frac{1}{4}$	1.30	2 $\frac{1}{8}$	2.25	3 $\frac{1}{8}$	3.30
1 $\frac{1}{4}$	.65	1 $\frac{3}{8}$	1.35	2 $\frac{1}{4}$	2.32	3 $\frac{1}{4}$	3.37
1 $\frac{3}{8}$	.75	1 $\frac{1}{2}$	1.40	2 $\frac{3}{8}$	2.40	3 $\frac{3}{8}$	3.45
1 $\frac{1}{2}$	.80	2	1.45	3	2.48	3 $\frac{1}{2}$	3.52
1 $\frac{3}{4}$	.85	2 $\frac{1}{4}$	1.55	3 $\frac{1}{8}$	2.63	3 $\frac{3}{4}$	3.60
1 $\frac{1}{8}$	.90	2 $\frac{3}{8}$	1.60	3 $\frac{1}{4}$	2.70	4	3.75
1 $\frac{1}{4}$	.95	2 $\frac{1}{2}$	1.65	3 $\frac{3}{8}$	2.77	4 $\frac{1}{8}$	4.00
1 $\frac{3}{8}$	1.00	2 $\frac{3}{4}$	1.75	3 $\frac{1}{2}$	2.92	4 $\frac{1}{4}$	4.15
1 $\frac{1}{2}$	1.05	2 $\frac{7}{8}$	1.80	3 $\frac{3}{4}$	3.00	4 $\frac{3}{8}$	4.28
1 $\frac{3}{4}$	1.10	2 $\frac{15}{16}$	1.88	3 $\frac{1}{2}$	3.08	4 $\frac{1}{2}$	4.42
1 $\frac{1}{8}$	1.15	2 $\frac{1}{4}$	2.03	3 $\frac{5}{8}$	3.14	4 $\frac{3}{4}$	4.56
1 $\frac{1}{4}$	1.20	2 $\frac{3}{8}$	2.10	3 $\frac{3}{4}$	3.22	4 $\frac{7}{8}$	4.70
1 $\frac{3}{8}$	1.25	2 $\frac{1}{2}$	2.17				

\* For prices of Split Collars, add 50 per cent to list price.



**"TOLEDO"  
COMPRESSION COUPLINGS**

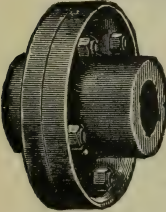
This style of Coupling will hold under the most severe strains, and will do any work within the capacity of the shafting it connects. It is especially desirable for the reason that no keyseating, facing, or fitting is required.



B3555

Size Shaft	1 <sup>3</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	2 <sup>11</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	3 <sup>11</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>
Price Complete	4.75	5.50	6.25	8.00	9.00	10.75	13.00	16.00	32.50	39.25	45.25	51.25

For reducing Couplings, add 20 per cent. to the list prices of larger bores.



B3557

**FLANGE OR PLATE COUPLINGS**

Our Flange Couplings are of a heavy design, and are accurately and carefully finished. When ordered fitted, each half is forced on the shaft under pressure, keyed and then faced off in a lathe, thus insuring a true running line.

Size of Shaft	Price Per Pair Not Fitted	Price For Fitting.	Size of Shaft	Price Per Pair Not Fitted	Price For Fitting	Size of Shaft	Price Per Pair Not Fitted	Price For Fitting
1 <sup>7</sup> / <sub>16</sub>	8.25	2.50	2 <sup>11</sup> / <sub>16</sub>	15.50	3.25	3 <sup>15</sup> / <sub>16</sub>	34.00	6.00
1 <sup>11</sup> / <sub>16</sub>	8.75	2.60	2 <sup>15</sup> / <sub>16</sub>	18.75	3.50	4 <sup>7</sup> / <sub>16</sub>	43.50	12.00
1 <sup>15</sup> / <sub>16</sub>	9.25	2.75	3 <sup>3</sup> / <sub>16</sub>	22.00	4.00	4 <sup>15</sup> / <sub>16</sub>	55.00	18.00
2 <sup>3</sup> / <sub>16</sub>	10.75	2.85	3 <sup>7</sup> / <sub>16</sub>	25.75	4.50	5 <sup>7</sup> / <sub>16</sub>	67.50	21.00
2 <sup>7</sup> / <sub>16</sub>	12.75	3.00	3 <sup>11</sup> / <sub>16</sub>	29.50	5.00	5 <sup>15</sup> / <sub>16</sub>	82.00	22.00

For the price of Reducing Couplings, add 10 per cent. to the list price of the larger half.

**RIBBED COMPRESSION COUPLINGS**

This is a satisfactory low-priced coupling of standard design and dimensions. All couplings 1<sup>15</sup>/<sub>16</sub> inches and over are keyseated and furnished complete with key.

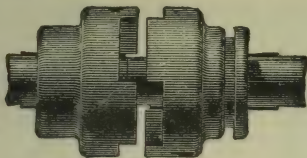


B3560

Size of Shaft	Price Not Fitted	Price Fitted	Size of Shaft	Price Not Fitted	Price Fitted	Size of Shaft	Price Not Fitted	Price Fitted
1 <sup>7</sup> / <sub>16</sub>	3.10	4.25	2 <sup>3</sup> / <sub>16</sub>	9.25	11.50	3 <sup>7</sup> / <sub>16</sub>	20.50	24.50
1 <sup>9</sup> / <sub>16</sub>	3.70	4.90	2 <sup>7</sup> / <sub>16</sub>	10.50	12.75	3 <sup>11</sup> / <sub>16</sub>	25.00	29.50
1 <sup>11</sup> / <sub>16</sub>	4.35	5.85	2 <sup>11</sup> / <sub>16</sub>	11.20	13.70	3 <sup>15</sup> / <sub>16</sub>	28.50	32.50
1 <sup>13</sup> / <sub>16</sub>	6.50	8.00	2 <sup>13</sup> / <sub>16</sub>	13.25	16.00			
1 <sup>15</sup> / <sub>16</sub>	7.60	9.10	3 <sup>3</sup> / <sub>16</sub>	16.75	20.00			

For Reducing Couplings, add 10 per cent. to the list price of the larger bore.

## JAW CLUTCH COUPLINGS



B3570

Diameter of shaft ..... inches	$1\frac{3}{16}$	$1\frac{7}{16}$	$1\frac{11}{16}$	$1\frac{15}{16}$	$2\frac{3}{16}$	$2\frac{7}{16}$
Not fitted ..... pair	7.00	8.00	8.50	9.00	11.25	14.25
Fitted on shaft ..... "	10.00	12.00	12.75	13.50	15.75	18.75
Lever and Clutch Band .....	4.00	4.50	5.00	5.25	5.50	6.00
Diameter of shaft ..... inches	$2\frac{1}{16}$	$2\frac{1}{8}$	$3\frac{1}{16}$	$3\frac{1}{8}$	$4\frac{1}{16}$	$4\frac{1}{8}$
Not fitted ..... pair	18.50	22.75	30.00	39.00	52.00	70.00
Fitted on shaft ..... "	23.25	27.75	37.50	48.75	65.50	87.00
Lever and Clutch Band .....	6.50	7.00	7.50	8.00	9.00	11.00

The Jaws of Clutch Couplings are planed to prevent back lash. We can also furnish either Right or Left Hand Spiral Jaw Couplings at the same prices as the Square Jaw Couplings.

## FRICTION CLUTCHES WITH EXTENDED SLEEVES

To arrive at the price of a Friction Clutch Pulley complete, add net price of either Cast Iron, or Wood Split Pulley to that of the Extended Sleeve Clutch, allowing about \$1.75 net for probable charge for boring hubs extra large to take Extended Sleeve. Always be particular in ordering to state whether Iron Center Wood Pulleys, all Wood Pulleys, or Cast Iron Pulleys are desired.

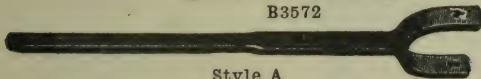
Keyseating Sleeves for Pulleys, 50c. net extra. Clutches running over 200 revolutions per minute, and to obtain the best results even though they run at a lower speed, should have either babbitted or bronze bushings.

Size No.	H. P. at 100 Revolutions	Largest Shaft Inches	Diameter Over all Inches	Length of Bearing Inches	Length of Sleeve Inches	Space on Shaft Inches	Price, Solid	Price, Split
1	$3\frac{1}{2}$	$2\frac{1}{2}$	$8\frac{1}{2}$	8	5	$18\frac{1}{2}$	28.00	37.50
2	$7\frac{1}{2}$	3	$10\frac{3}{4}$	$9\frac{1}{2}$	6	$20\frac{1}{4}$	34.00	45.00
3	13	$3\frac{1}{2}$	$12\frac{1}{2}$	11	7	22	40.00	53.00
4	19	$4\frac{1}{2}$	$14\frac{1}{2}$	12	8	26	54.00	72.00
5	27	5	$16\frac{1}{2}$	15	10	29	75.00	100.00
6	36	$6\frac{1}{2}$	$18\frac{1}{4}$	16	11	32	95.00	125.00
7	55	$7\frac{1}{2}$	$21\frac{1}{4}$	17	12	$34\frac{1}{2}$	145.00	195.00
8	70	12	26	18	13	$37\frac{1}{2}$	180.00	240.00
9	100	14	37	20	15	$39\frac{1}{2}$	250.00	330.00

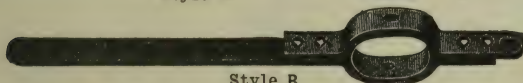
Price includes Collar and Shifter Fork.

## SHIFTER FORKS

B3572



Style A

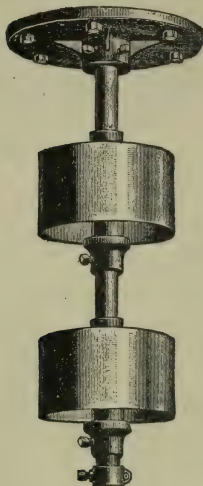


Style B

Always specify which style of Shifter Lever is desired. Unless otherwise specified, style "A" will be furnished.

See price list at top of page

STATIONARY MULE  
PULLEY STANDS



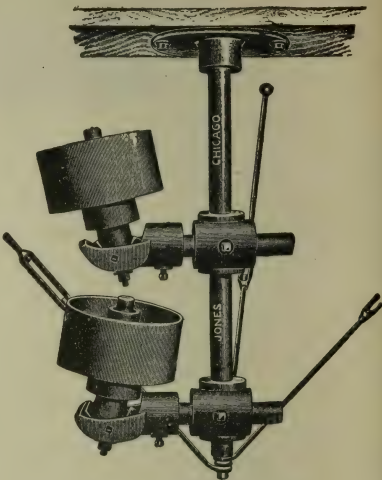
B3575

Complete with Ceiling Plate, Cup Collars, Guy Rods, and Two Iron Pulleys.

Price List

For 2 inch Belt, 10 x 3 inches....	22.50
" 3 " " 10 x 4 " ....	25.00
" 4 " " 12 x 5 " ....	30.00
" 5 " " 12 x 6 " ....	32.00
" 6 " " 16 x 7 " ....	37.50
" 7 " " 16 x 8 " ....	40.00
" 8 " " 24 x 10 " ....	45.00
" 10 " " 24 x 12 " ....	55.00
" 12 " " 30 x 14 " ....	65.00

ADJUSTABLE MULE  
PULLEY STANDS



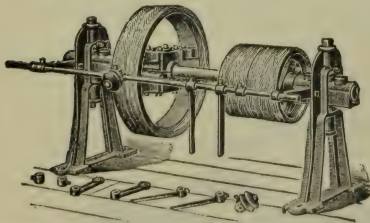
B3576

For use where two shafts are not on the same plane.

Price includes One Shaft, Two Pulleys, Two Adjustable Arms, Top Plate, and Guy Rods.

Price List

For 4 inch Belt, 12 x 5 inches...	60.00
" 5 " " 12 x 6 " ....	62.00
" 6 " " 12 x 7 " ....	75.00
" 7 " " 16 x 8 " ....	78.00
" 8 " " 16 x 9 " ....	85.00
" 10 " " 24 x 12 " ....	112.00
" 12 " " 30 x 14 " ....	160.00



COUNTER SHAFT  
FIXTURES

B3577

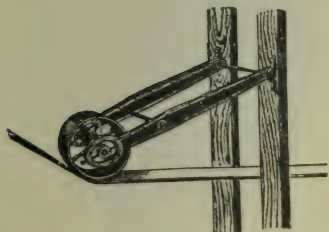
Prices include Rod 4 feet long. Extra Length Rods 45 cents per foot.

Price does not include Pulley, Shaft, or Hangers.

Length of Arm and Fingers.....inches	8	10	12
Price, per Arm with Bolt.....each	.95	1.10	1.30
" Fixtures without Arms....."	2.40	2.80	3.10
" Complete Set of Attachments...."	4.25	4.90	5.50

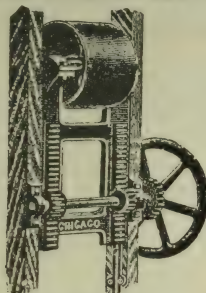
# BELT TIGHTENERS

## SWINGING BELT TIGHTENER



B3580

## BELT TIGHTENER FOR WOODEN FRAMES



B3581

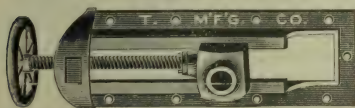
Motion	Size of Pulley	Price
3 feet	12 x 8	30.00
3 "	12 x 10	35.00
4 "	20 x 14	40.00
4 "	24 x 16	45.00
5 "	28 x 20	50.00
5 "	30 x 26	55.00

No.	Length of Adjustment	Size of Pulley Diam. Face	Diam. of Shaft	Price With Iron Side Frames	Price Without Iron Frame
00	1 1/8 ft.	12 x 9	1 1/16	37.50	30.00
0	1 3/8 "	18 x 12	1 1/8	50.00	40.00
1	2 "	24 x 14	1 5/16	70.00	56.00
2	3 1/2 "	28 x 20	2 7/16	100.00	82.00
3	4 "	30 x 26	2 1/8	160.00	120.00
4	5 "	42 x 38	2 1/2	300.00	250.00

# TAKE-UPS

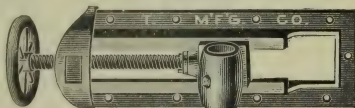
For use where it is necessary to take up slack in belts, as in elevators. Made to pull and push.

## A STYLE



B3583

## B STYLE



B3584

In ordering give diameter of shaft.

No. of Frame	Diameter of Shaft	Price, Each, "A" or "B"	No. of Frame	Diameter of Shaft	Price, Each, "A" or "B"	No. of Frame	Diameter of Shaft	Price, Each, "A" or "B"
4	1 1/16	1.75	7	1 11/16	4.00	20	2 1/8	11.00
4	1 3/16	1.90	9	1 13/16	4.75	20	2 3/16	13.50
4	1 5/16	2.00	9	2 1/8	5.00	24	3 1/16	15.00
5	1 7/16	2.55	12	2 3/8	6.25	36	3 5/8	20.00
5	1 9/16	2.70	12	2 5/8	6.75	48	3 7/8	35.00
7	1 11/16	3.25	20	2 7/8	9.50	60	3 9/8	40.00
7	1 13/16	3.50	20	2 11/16	10.00	72	4 1/16	50.00

The number of frame indicates length of movement in inches.

For extra large wide belts and chain conveyors we have special Take-Up Boxes. Prices on application.



## FINISHED SHAFTING

Cold Rolled and Turned

## B3590

Shafting is manufactured to the U. S. Standard Gauge, is polished, absolutely round, straight, and true to size. Cut in lengths from 1 foot to 24 feet inclusively.

Special net prices on shafting  $4\frac{1}{2}$  inches and larger.

Owing to the inconvenience in handling, and the liability to injury in transit, we recommend the use, as far as practical, of length of shafting 20 feet and under, also that shafting be boxed for shipment. Charge for boxing is at actual cost, and shafting not boxed is shipped at customer's risk of damage in transit.

## STANDARD PRICE LIST OF FINISHED SHAFTING

Size	Price per Lb.	Weight per Ft.	Price per Ft.	Size	Price per Lb.	Weight per Ft.	Price per Ft.	Size	Price per Lb.	Weight per Ft.	Price per Ft.
$\frac{1}{4}$	.10	.167	.02	$1\frac{1}{16}$	.05	7.61	.39	$3\frac{1}{8}$	.05 $\frac{1}{4}$	26.09	1.37
$\frac{3}{8}$	.08 $\frac{1}{2}$	.260	.02	$1\frac{1}{8}$	.05	8.18	.41	$3\frac{1}{16}$	.05 $\frac{1}{4}$	27.16	1.43
$\frac{1}{2}$	.07	.375	.03	$1\frac{1}{4}$	.05	8.78	.44	$3\frac{3}{8}$	.05 $\frac{1}{4}$	28.22	1.49
$\frac{3}{4}$	.07	.511	.04	$1\frac{3}{8}$	.05	9.39	.47	$3\frac{1}{2}$	.05 $\frac{1}{4}$	30.43	1.60
$1\frac{1}{2}$	.07	.667	.05	$1\frac{1}{2}$	.05	10.03	.51	$3\frac{7}{8}$	.05 $\frac{1}{4}$	31.58	1.66
$1\frac{3}{8}$	.06	.845	.06	2	.05	10.69	.54	$3\frac{1}{2}$	.05 $\frac{1}{2}$	32.73	1.81
$1\frac{1}{4}$	.06	1.05	.07	$2\frac{1}{8}$	.05	11.35	.57	$3\frac{3}{4}$	.05 $\frac{1}{2}$	35.20	1.94
$1\frac{1}{8}$	.06	1.26	.08	$2\frac{1}{4}$	.05	12.07	.61	$3\frac{1}{4}$	.05 $\frac{1}{2}$	36.40	2.01
$1\frac{3}{4}$	.05 $\frac{1}{2}$	1.50	.09	$2\frac{3}{8}$	.05	12.80	.65	$3\frac{1}{2}$	.05 $\frac{1}{2}$	37.57	2.07
$1\frac{1}{2}$	.05 $\frac{1}{2}$	2.05	.12	$2\frac{1}{2}$	.05	13.52	.68	$3\frac{3}{4}$	.05 $\frac{1}{2}$	39.95	2.20
1	.05 $\frac{1}{2}$	2.35	.13	$2\frac{1}{4}$	.05	14.35	.72	$3\frac{1}{2}$	.05 $\frac{1}{2}$	41.25	2.27
$1\frac{1}{8}$	.05 $\frac{1}{2}$	2.68	.15	$2\frac{3}{8}$	.05	15.07	.76	4	.06	42.75	2.57
$1\frac{1}{4}$	.05 $\frac{1}{2}$	3.02	.17	$2\frac{1}{2}$	.05	15.89	.80	$4\frac{1}{16}$	.06	47.40	2.85
$1\frac{3}{8}$	.05 $\frac{1}{2}$	3.38	.19	$2\frac{1}{2}$	.05	16.70	.84	$4\frac{1}{4}$	.06	48.26	2.90
$1\frac{1}{2}$	.05 $\frac{1}{2}$	3.77	.21	$2\frac{3}{8}$	.05	17.55	.88	$4\frac{3}{8}$	.06	51.80	3.11
$1\frac{3}{4}$	.05 $\frac{1}{2}$	4.17	.23	$2\frac{1}{2}$	.05	18.41	.93	$4\frac{7}{8}$	.06	52.62	3.16
$1\frac{1}{8}$	.05 $\frac{1}{2}$	4.61	.26	$2\frac{1}{4}$	.05	19.31	.97	$4\frac{1}{2}$	.06 $\frac{1}{2}$	54.11	3.52
$1\frac{3}{8}$	.05 $\frac{1}{2}$	5.05	.28	$2\frac{3}{4}$	.05	20.21	1.02	$4\frac{1}{16}$	.06 $\frac{1}{2}$	58.66	3.82
$1\frac{1}{2}$	.05 $\frac{1}{2}$	5.52	.31	$2\frac{1}{4}$	.05	21.15	1.06	$4\frac{3}{4}$	.06 $\frac{1}{2}$	60.88	3.96
$1\frac{3}{4}$	.05	6.01	.31	$2\frac{3}{8}$	.05	22.09	1.11	$4\frac{1}{2}$	.06 $\frac{1}{2}$	65.50	4.26
$1\frac{1}{8}$	.05	6.52	.33	$2\frac{1}{4}$	.05	23.06	1.16	5	.07	67.45	4.72
$1\frac{3}{8}$	.05	7.06	.36	3	.05	24.05	1.21				

The above prices are for shafts up to 24 feet long. Extra for cutting other than 24 feet.

## FLAT AND SQUARE SHAFTING

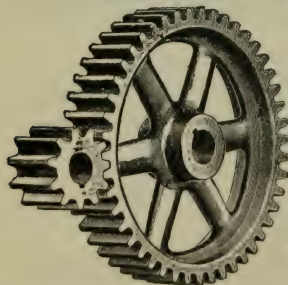
## SPUR GEARS

## AND FLEXIBLE SHAFTING

Prices quoted on application.

## BEVEL GEARS

## MITER GEARS

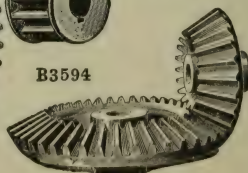


B3592



B3593

B3594

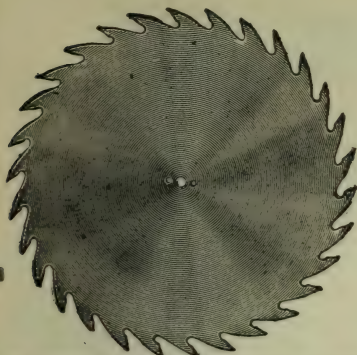


B3596



B3597

Sizes and prices furnished on application.



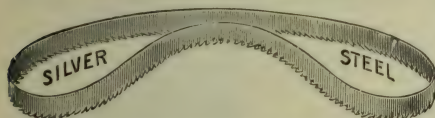
## SOLID TOOTH CIRCULAR SAWS

B3600

When ordering state diameter and gauge, right or left hand, ripping or cross-cutting, and size of mandrel.

No extra charge for saws one gauge thicker than list. Circular saws beveled one gauge without extra charge up to 38 inches; 40 inches and larger beveled two gauges without extra charge. Circular saws 48 inches and larger, if made thinner than 10 gauge, are not warranted. Add 10 per cent to list for each gauge thinner than 10 gauge.

Diameter, Inches	Hole Inch	Thickness, Gauge	Price, Each	Ea. Gauge Heavier Additional	Diameter, Inches	Hole Inch	Thickness, Gauge	Price, Each	Ea. Gauge Heavier Additional	Diameter, Inches	Hole Inch	Thickness, Gauge	Price, Each	Ea. Gauge Heavier Additional
4	3/4	19	1.10	.03	18	1 1/8	13	7.50	.30	40	2	9	36.00	2.00
5	"	19	1.30	.04	20	1 1/4	13	9.00	.35	42	"	8	42.00	2.50
6	"	18	1.55	.05	22	"	12	11.00	.45	44	"	8	50.00	3.00
7	"	18	1.85	.06	24	"	11	13.00	.55	46	"	8	60.00	3.50
8	3/8	18	2.20	.08	26	"	11	15.00	.65	48	"	8	70.00	4.00
9	"	17	2.75	.10	28	1 1/8	10	17.00	.80	50	"	7	80.00	4.50
10	1	16	3.30	.12	30	"	10	19.00	.90	52	"	7	90.00	5.00
11	"	16	3.80	.14	32	1 1/2	10	22.00	1.00	54	"	7	100.00	6.00
12	"	15	4.15	.17	34	"	9	25.00	1.20	56	"	7	115.00	7.00
14	1 1/8	15	5.00	.21	36	1 3/8	9	28.00	1.40	58	"	7	130.00	8.00
16	"	14	6.00	.25	38	"	9	31.00	1.75	60	"	6	145.00	9.00



## NARROW BAND SAWS FOR LIGHT AND SCROLL SAWING

B3602

Not Joined, Filed, or Set

Width	Standard Gauge	Standard Teeth	Per Foot	Width	Standard Gauge	Standard Teeth	Per Foot	Width	Standard Gauge	Standard Teeth	Per Foot
1/8	22	8 Points	.07	5/8	21	4 1/2 Points	.13	1 1/4	20	3 1/2 Points	.23
3/16	22	"	.08	3/4	21	4 "	.15	1 3/8	20	3 "	.26
1/4	22	6 "	.09	7/8	21	4 "	.17	1 1/2	20	3 "	.29
5/16	21	5 1/2 "	.10	1	20	3 1/2 "	.19	1 3/4	20	3 "	.32
3/8	21	5 "	.11	1 1/8	20	3 1/2 "	.21				

Narrow band saws with beveled backs, advance list 50 per cent for first gauge, and 10 per cent for each additional gauge.

For bands with knife edge, add 10 cents per foot to list.

Filing and setting, 4 cents per foot extra.

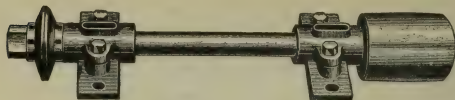
Brazing extra: 1/4 to 1/2 in., 40c; 5/8 to 3/4 in., 50c; 1 to 1 1/4 in., 60c; 1 1/2 to 1 3/4 in., 80c.

**RUBBER BAND SAW TIRES**

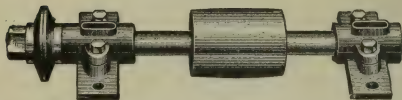
Per Pound, \$2.00

**SILVER SOLDER**

Per Ounce, \$2.00



End  
Pulley  
B3605



Centre  
Pulley  
B3606

## CIRCULAR SAW MANDRELS

Number	Diameter of Pulley	Face of Pulley	Diameter of Flange	Weight Lbs.	Length of Shaft	Diameter of Shaft	Size of Hole in Saw	Price Mandrel Complete
1	2½ in.	3½ in.	2½ in.	18½	16 in.	1⅛ in.	1 in.	6.00
2	3½	4	3	22½	19	1⅜	1⅛	7.00
3	3½	4½	3½	32	21	1⅝	1¼	8.00
4	4	5	4	38	24	1⅞	1⅝	9.00
5	4½	5½	4½	44½	26	1⅞	1⅝	10.00
6	5	6	5	46	28	1⅞	1⅝	11.00
7	5½	6½	5½	49	30	1⅞	1⅝	12.00
8	6	7	6	59	32	1⅞	1⅝	15.00
9	7	8	6	75	37	1⅞	1⅝	18.00
10	8	8	6	80	41	1⅞	1⅝	20.00
11	9	10	6	90	48	2⅜	2	25.00

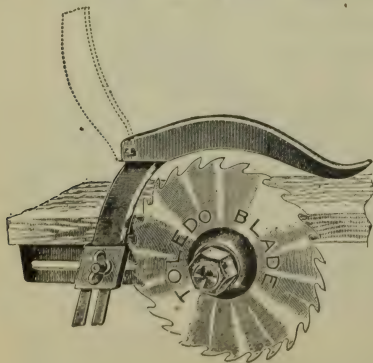
When ordering Saw Mandrels, send sketch and give distance from saw to end of mandrel, if the pulley is between the bearings. If the pulley is on the end of mandrel, give distance from saw to inside edge of pulley. Also whether the pulley is on the right or left hand side of mandrel when the saw is running towards you.

Mandrels are made with pulley on right hand side with left-hand thread unless otherwise ordered.

## DOUBLE END MANDRELS

We furnish eleven sizes of Double End Mandrels Nos. 1 to 11. We use the same size pulley, flange, shaft and hole in saw as the list above.

Distance from saw to saw is the same as the length of shaft in list above. Add 40 per cent to list price above for Double End Mandrels. Any size or length mandrel wanted can be made to order.



## RELIABLE SAW GUARDS

B3610

Adjustable, easily operated, with one set-screw. Saws will not pinch. Prevents accidents. No fly-back. Keeps sawdust from operator's face.

No. 1 for Saws 6 to 12 in. diameter.

" 2 " " 10 " 16 " "

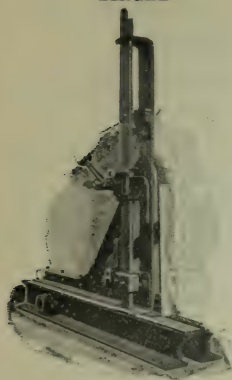
" 3 " " 16 " 20 " "

Price, No. 1 or No. 2.....each 3.50

" " 3....." 4.00



**SINGLE**

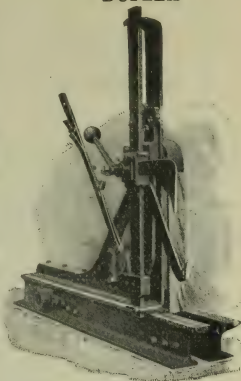


## IDEAL SAW MILL DOGS

When ordering, state whether Right or Left Hand Machine is wanted.

\* Notice the improved locking mechanism on the Single Dog, by which the dog bit is locked at any point as it is forced in to the timber. This device is controlled by the power lever and is entirely automatic in its operation.

**DUPLEX**



\* B3612

† B3613

† Knight's Ideal Duplex Dog resembles in design the Single Dog, differing only in that it catches the log from above and below.

No.	Mills Used On	Height	Size Guide Bar	Size Slide Bar	Size Dog Bit	Slide Heads	WEIGHT		PRICE, PAIR	
							Single	Duplex	Single	Duplex
1	Pony .....	38 in.	3 x 1 1/4	2 x 3/8	1 1/2 x 1 1/2	Cast	60 lbs.	80 lbs.	25.00	45.00
2	Medium .....	41 "	3 1/2 x 1 1/4	2 1/4 x 3/8	2 x 1 1/2	"	95 "	110 "	30.00	50.00
3	Heavy .....	45 "	4 x 3/8	3 x 3/8	2 1/2 x 1 1/2	"	115 "	125 "	35.00	55.00
3 Sp'l	" Steam Feed	49 "	4 x 3/8	3 x 3/8	2 1/2 x 1 1/2	Forged Steel	135 "	150 "	60.00	85.00
4	Extra Heavy	51 "	5 x 3/4	3 1/2 x 3/4	2 1/2 x 3/4	"	175 "	235 "	85.00	125.00

**STYLE A**



B3620

## MALLEABLE IRON ELEVATOR BUCKETS

**STYLE B**



B3621

**STYLE A**

Length	Width	Depth	Price	Capacity Cubic In.	Capacity Quarts	Length	Width	Depth	Price	Capacity Cubic In.	Capacity Quarts
4	2 3/4	2 1/2	.20	14	.21	12	6	5	1.20	205	3.
5	3 1/2	3	.35	25	.38	12	7	5 1/2	1.25	260	4.
6	4	3 1/2	.45	42	.63	14	7	5 1/2	1.75	310	4.62
7	4 1/2	4	.55	65	.97	16	7	5 1/2	2.25	360	5.37
8	5	4	.65	95	1.41	18	7	5 1/2	3.50	410	6.10
10	6	5	.90	175	2.61	18	10	7	4.50	1175	17.5
11	6	5	1.00	190	2.84	20	7	5 1/2	3.75	460	7.

**STYLE B**

6	3 1/2	2 1/2	.48	38	.57	14	5 1/2	4	1.40	180	2.80
8	3 1/2	2 1/2	.50	50	.75	16	5 1/2	4	1.80	200	3.00
10	4	3	.70	110	1.65	18	5 1/2	4	2.00	220	3.30
12	5 1/2	4	.90	160	2.40	....	....	....	....	....	....

Punched for belt or chain as wanted. If buckets are to replace others or to go on belt already punched, send template.



**"SALEM"**  
**ELEVATOR**



**STEEL**  
**BUCKETS**

B3622

SIZE OF BUCKET		SUITABLE FOR ORDINARY MILL AND ELEVATOR WORK		SUITABLE FOR EAR CORN, CORN AND COB, AND SIMILAR HEAVY SUBSTANCES				SIZE OF BUCKET		SUITABLE FOR ORDINARY MILL AND ELEVATOR WORK		SUITABLE FOR EAR CORN, CORN AND COB, AND SIMILAR HEAVY SUBSTANCES			
Width on Belt, In.	Projection Inches	Gauge of Steel Used	Price Each	Gauge of Steel Used	Price Each	Gauge of Steel Used	Price Each	Width on Belt, In.	Projection Inches	Gauge of Steel Used	Price Each	Gauge of Steel Used	Price Each	Gauge of Steel Used	Price Each
2	2	25	.04	18	.16	...	...	10	5 1/2	19	.54	16	.76	14	.88
2 1/2	2 1/4	24	.05	18	.18	...	...	10 6	6	18	.62	16	.81	14	.90
3	2 1/2	24	.06	18	.19	...	...	11 6	6	18	.65	16	.85	14	.94
3 1/2	2 1/2	24	.07	18	.20	...	...	12 6	6	18	.68	16	.89	14	.98
3 3/4	3	23	.09	16	.28	...	...	14 6	6	18	.74	16	.97	14	1.06
3 1/2	3	23	.10	16	.29	...	...	16 6	6	18	.81	16	1.05	14	1.15
4	3	23	.11	16	.30	...	...	18 6	6	18	.89	16	1.13	14	1.25
4 1/2	3	23	.12	16	.31	...	...	20 6	6	18	.95	16	1.21	14	1.35
4 1/2	3 1/2	22	.12	16	.33	14	.35	10 7	7	18	.73	16	1.01	14	1.10
4 1/2	3 1/2	22	.13	16	.34	14	.36	11 7	7	18	.76	16	1.05	14	1.15
5	3 1/2	22	.14	16	.35	14	.37	12 7	7	18	.80	16	1.09	14	1.20
5	4	22	.18	16	.39	14	.44	14 7	7	18	.88	16	1.17	14	1.30
5 1/2	4	21	.19	16	.40	14	.45	16 7	7	18	.96	16	1.25	14	1.40
6	4	21	.20	16	.41	14	.46	18 7	7	18	1.04	16	1.33	14	1.50
7	4 1/2	20	.30	16	.49	14	.54	20 7	7	18	1.12	16	1.41	14	1.62
8	5	19	.41	16	.59	14	.66	16 8	8	18	1.14	16	1.41	14	1.69
9	5	19	.43	16	.63	14	.70	18 8	8	18	1.22	16	1.51	14	1.81
...	...	...	...	...	...	...	...	20 8	8	18	1.30	16	1.61	14	1.93

Odd and extra heavy sizes quoted on application.

**TIN ELEVATOR BUCKETS — B3624**

Across Belt.	Projection	Capacity Pints	List	Across Belt.	Projection	Capacity Pints	List
2	x 2	1/6	.07	4	x 3 1/2	7/8	.13
2 1/2	x 2 1/4	1/4	.08	4 1/2	x 3 1/2	1	.14
3	x 3	2 1/5	.09	5	x 4	1 1/2	.16
3 1/2	x 3	1/2	.10	5 1/2	x 4	1 3/4	.17
4	x 3	3/4	.12	6	x 4	1 1/2	.18

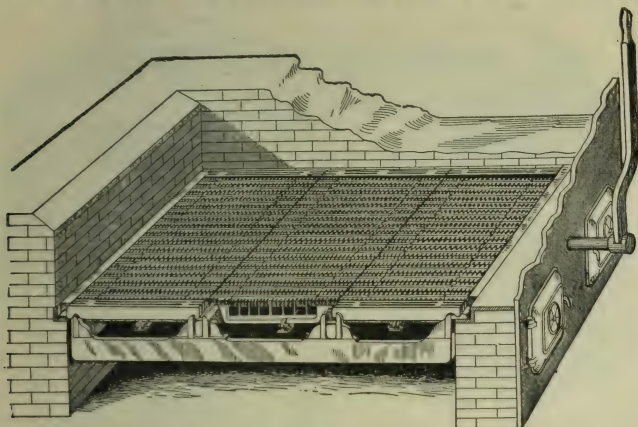
**SHEET STEEL CORN BUCKETS WITH BANDS — B3626**

Across Belt.	Projection	Number of Bolt Holes	Capacity Quarts	List	Across Belt.	Projection	Number of Bolt Holes	Capacity Quarts	List
7	x 5	3	1 1/2	.33	13	x 7	4	4 1/2	.62
8	x 5 1/2	3	2	.36	14	x 7	4	5	.65
9	x 6	3	2 1/2	.40	15	x 7	5	5 1/2	.70
10	x 6	3	3	.44	16	x 7	5	6	.76
11	x 7	4	3 1/2	.56	18	x 7	6	7	.82
12	x 7	4	4	.59	20	x 7	6	9	.90

Odd sizes extra, according to size and cost.

As indicated by the name, the above buckets are intended for handling ear corn, and corn and cobs, and for these purposes they are unexcelled.

## THE MARTIN ANTI-FRICTION ROCKING GRATE



B3630

Price, \$5.00 per square foot of grate surface.

The illustration shows setting commonly used for a horizontal return tubular boiler.

Slack and screenings on a Martin Grate will give as good steam results as high priced coal on plain grate.

The grate is made to suit any size and grade of coal — by a simple rearrangement of the bars the openings can be changed in a few minutes to suit fine or coarse grades of coal. The Martin Grate averages over 80 pounds to the square foot — the bars vary in length from 18 inch to 30 inch. Very simple in construction; having few parts can be installed by any engineer. No change of the fire-box required; the only cutting required is a 2-inch hole through the boiler front for the shaker rod. For furnaces 5½ feet or less in depth a grate two sections deep is used. Where it is over 5½ feet deep it is furnished in three sections as illustrated above. When furnace is over 6 feet wide, and for most water-tube boilers, the grate is split down the centre so that half the fire can be cleaned at a time without disturbing the other half.

### COMMON PLAIN GRATE BARS



B3631

### HERRING-BONE GRATE BARS

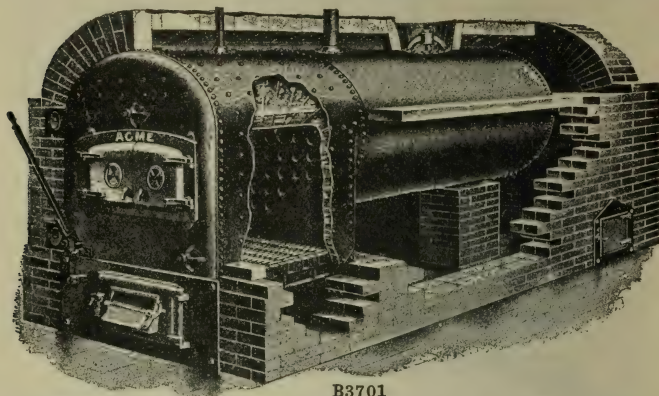


B3632

State length bars wanted, and width to be covered. Prices on application.

## ACME FIRE BOX HOUSE HEATING BOILERS

Showing Brick Setting



B3701

For Brick Setting. Without Domes. Manholes in all Boilers over  
30 inches Diameter

Number.....	1	2	3	4	5	6	7
Diameter of Shell..... inches	30	30	30	36	36	36	42
Length over all..... feet	6½	7½	8½	7½	9	10½	8½
Length of Fire Box..... inches	26	32	38	32	38	44	38
Width of Fire Box..... "	24	24	24	30	30	30	36
Fire Doors { Single Doors..... "	12x18	12x18	12x18	.....	.....	.....	.....
{ Double Doors..... "	.....	.....	.....	16x22	16x22	16x22	16x24
Approx. weight of Boiler complete, with castings... lbs.	2450	2750	3150	3450	3850	4350	4500
Steam Tapping { Steam outlet..... "	3	3	4	4	4	4	6
{ Return Outlet..... "	2½	2½	3	3	3	3	4
Water Tapping—Flow and Return, 2 each	4	4	4	5	5	5	5
Size of Smoke Pipe..... inches	14	14	14	16	16	16	18
Rating Steam..... square feet	900	1000	1200	1400	1700	2100	2200
Rating Water..... "	1400	1600	1900	2200	2700	3400	3500
Price, complete, with Castings and Trimmings.....	303.00	318.00	339.00	394.00	419.00	454.00	483.00
Deduct for Trimmings omitted.....	15.00	15.00	15.00	17.00	17.00	17.00	20.00
Price, Water Boiler.....	295.00	310.00	330.00	390.00	415.00	450.00	475.00
Number.....	8	9	10	11	12	13	14
Diameter of Shell..... inches	42	42	48	48	48	54	54
Length over all..... feet	10	11½	10½	12	13½	14	16½
Length of Fire Box..... inches	44	50	44	50	56	56	62
Width of Fire Box..... "	36	36	42	42	42	48	48
Fire Doors { Single Doors..... "	.....	.....	.....	.....	.....	.....	.....
{ Double Doors..... "	16x24	16x24	18x30	18x30	18x30	18x30	18x30
Approx. weight of Boiler complete, with castings... lbs.	5000	5650	6650	7350	8000	9100	10250
Steam Tapping { Steam Outlet..... "	6	6	6	6	7	7	7
{ Return Outlet..... "	4	4	4	4	5	5	5
Water Tapping—Flow and Return, 2 each	6	6	6	6	7	7	7
Size of Smoke Pipe..... inches	18	18	22	22	22	24	24
Rating Steam..... square feet	2500	2900	3200	3800	4400	4900	5800
Rating Water..... "	4000	4600	5100	6100	7000	7800	9300
Price, complete, with Castings and Trimmings.....	533.00	583.00	653.00	703.00	763.00	888.00	963.00
Deduct for Trimmings omitted.....	20.00	20.00	20.00	20.00	27.00	27.00	27.00
Price, Water Boiler.....	525.00	575.00	645.00	695.00	755.00	880.00	955.00

Nos. 15, 16, 17, 18, 19, and 20 quoted on application.

No extra charge made for hoe and poker shipped with boiler. Tubes inserted in fire box for domestic coil will be charged extra, \$2.00 net.



## IDEAL SECTIONAL BOILERS

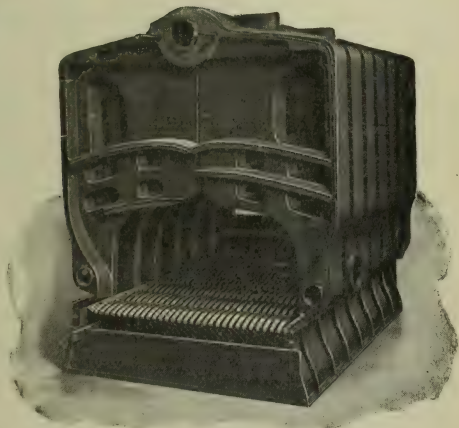
Showing the 28-inch Steam  
Boiler Complete

No. S-28-7 BOILER

B3702

Rear Sectional View of  
48-inch Water Boiler

No. W-48-8 BOILER



B3703

**NOTE.**—Rated Capacity is for direct radiation and all piping, flow, and return. Ideal Sectional Boilers are made especially for **Hard Coal**, for **Soft Coal**, and for **Coke**.

The illustrations are of boilers for coal. The firing door in the coke boiler is higher up, giving room for a deeper bed of coke.

These Coke Boilers also yield good results when used with hard coal, the magazine feature enabling the Boilers to run a long time with one firing. The construction of this Boiler makes it adaptable for burning gas as fuel.

Do not bush flow pipe outlets on the Steam Boilers—connect all of them full size to the main.

For Price List of Boilers, see next page.



## IDEAL SECTIONAL BOILERS

Can be fitted specially for burning wood. When soft coal is to be used a size larger boiler should be selected than would be required for hard coal.

STEAM BOILER (COAL)			WATER BOILER (COAL)			DIMENSIONS, STEAM OR WATER				
Num- ber	Price Com- plete	Rating (See Note)	Num- ber	Price Com- plete	Rating (See Note)	Sec- tions	*L'gth Inches	Found- ation Inside Inches	Fire Pot Area Inches	Out- lets Inches
S-48-6	1234.00	4750	W-48-6	1274.00	7825	6	64¾	56 x 52	50 x 53	2-6
S-48-7	1484.00	5700	W-48-7	1464.00	9400	7	75½	66¾ x 52	50 x 64	2-6
S-48-8	1674.00	6650	W-48-8	1654.00	10975	8	86¾	77½ x 52	50 x 75	3-6
S-48-9	1864.00	7600	W-48-9	1844.00	12550	9	97	88¼ x 52	50 x 85	3-6
S-48-10	2054.00	8550	W-48-10	2034.00	14125	10	107¾	99 x 52	50 x 96	3-6
S-36-5	730.00	2100	W-36-5	710.00	3450	5	47¾	47 x 44¾	41 x 36	2-5
S-36-6	845.00	2625	W-36-6	825.00	4325	6	56½	47 x 53⅞	41 x 45	2-5
S-36-7	960.00	3150	W-36-7	940.00	5200	7	66	47 x 63	41 x 54	3-5
S-36-8	1075.00	3675	W-36-8	1055.00	6050	8	75⅞	47 x 72½	41 x 63	3-5
S-36-9	1190.00	4200	W-36-9	1170.00	6925	9	84¼	47 x 81¼	41 x 72	4-5
S-28-5	490.00	1300	W-28-5	480.00	2150	5	42	39 x 39	33 x 31	2-4
S-28-6	587.00	1625	W-28-6	577.00	2675	6	50	39 x 47	33 x 39	2-4
S-28-7	684.00	1950	W-28-7	674.00	3200	7	58	39 x 55	33 x 47	3-4
S-28-8	781.00	2275	W-28-8	761.00	3725	8	66	39 x 63	33 x 55	3-4
S-22-5	340.00	800	W-22-5	330.00	1300	5	38	31 x 35	25 x 28	2-4
S-22-6	400.00	1000	W-22-6	390.00	1650	6	45	31 x 42	25 x 35	2-4
S-22-7	460.00	1200	W-22-7	450.00	2000	7	52	31 x 49	25 x 42	3-4
S-22-8	520.00	1400	W-22-8	510.00	2350	8	59	31 x 56	25 x 49	3-4
S-15-4	157.00	300	W-15-4	147.00	500	4	27½	24¼ x 25¾	19 x 18	2-3
S-15-5	210.00	425	W-15-5	200.00	700	5	33¾	30½ x 25¾	19 x 25	2-3
S-15-6	245.00	550	W-15-6	235.00	900	6	40	36¾ x 25¾	19 x 31	2-3
S-15-7	302.50	675	W-15-7	292.50	1100	7	46¼	43 x 25¾	19 x 37	2-3
S-15-8	340.00	800	W-15-8	330.00	1300	8	53½	46¼ x 25¾	19 x 43	2-3

\*Add to length for Smoke Hood, S-48 and W-48 sizes, 27 $\frac{1}{4}$  inches; S-36 and W-36 sizes, 22 inches; S-28 and W-28 sizes, 18 inches; S-22 and W-22 sizes, 15 $\frac{1}{4}$  inches; S-15 and W-15 sizes, 13 $\frac{1}{8}$  inches.

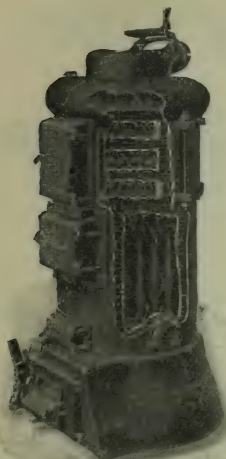
Size **Smoke Pipe**: For No. 48 sizes, 21 inches; No. 36 sizes, 15 inches; No. 28 sizes, 12 inches; No. 22 sizes, 10 inches; No. 15 sizes, 8 inches.

**Height and Width of Boilers**, including trimmings: No. 48 sizes, Steam 97x80 in., Water 81 $\frac{1}{4}$ x68 in.; No. 36 sizes, Steam 83x64 in., Water 70x53 $\frac{1}{4}$  in.; No. 28 sizes, Steam 75 $\frac{1}{2}$ x53 $\frac{1}{2}$  in., Water 60 $\frac{1}{2}$ x44 in.; No. 22 sizes, Steam 67 $\frac{1}{4}$ x45 $\frac{1}{4}$  in., Water 52 $\frac{1}{4}$ x36 in.; No. 15 sizes, Steam 61 $\frac{1}{2}$ x38 $\frac{3}{4}$  in., Water 42 $\frac{1}{16}$ x27 $\frac{1}{2}$  in.

## COKE BOILERS (See Note, bottom of preceding page)

STEAM BOILER					WATER BOILER					DIMENSIONS, STEAM AND WATER							
No.	Price Complete	Rat-ings (See Note)	Total Height	Total Width	Water Line	No.	Price Complete	Rat-ings (See Note)	Total Height	Total Width	Sections	Length with Smoke Hood	Founda-tion Inches	Grate Inches	Aver-age Firepot Inches	Outlets	Smoke Pipe
S-2-4	140.00	225	65	35	44	W-2-4	130.00	375	49	24	4	35	23 x 24	10 x 16	15 x 16	2-3	7
S-2-5	170.00	300	65	35	44	W-2-5	160.00	500	49	24	5	40	28 x 24	10 x 21	15 x 21	2-3	7
S-2-6	200.00	375	65	35	44	W-2-6	190.00	625	49	24	6	45	33 x 24	10 x 26	15 x 26	2-3	7
S-2-7	230.00	450	65	35	44	W-2-7	220.00	750	49	24	7	50	38 x 24	10 x 32	15 x 32	2-3	7
S-3-5	260.00	500	67	42	46	W-3-5	250.00	825	52	31	5	43	32 x 30	12 x 25	18 x 25	2-3	9
S-3-6	295.00	600	67	42	46	W-3-6	285.00	1000	52	31	6	50	38 x 30	12 x 31	18 x 32	2-3	9
S-3-7	330.00	700	67	42	46	W-3-7	320.00	1150	52	31	7	56	45 x 30	12 x 38	18 x 38	2-3	9
S-4-5	375.00	800	76	47	56	W-4-5	365.00	1325	63	36	5	50	36 x 36	17 x 29	24 x 29	2-4	12
S-4-6	445.00	1000	76	47	56	W-4-6	435.00	1650	63	36	6	57	44 x 36	17 x 36	24 x 36	2-4	12
S-4-7	515.00	1200	76	47	56	W-4-7	505.00	2000	63	36	7	64	51 x 36	17 x 44	24 x 44	2-4	12
S-5-5	600.00	1400	82	59	62	W-5-5	590.00	2325	70	48	5	52	40 x 42	33 x 22	33 x 32	2-4	12
S-5-6	690.00	1700	82	59	62	W-5-6	675.00	2800	70	48	6	60	48 x 42	41 x 22	41 x 32	2-4	12
S-5-7	780.00	2000	82	59	62	W-5-7	760.00	3300	70	48	7	69	57 x 42	49 x 22	49 x 32	3-4	12
S-5-8	870.00	2300	82	59	62	W-5-8	845.00	3800	70	48	8	77	65 x 42	58 x 22	58 x 32	3-4	12
S-5-9	960.00	2600	82	59	62	W-5-9	930.00	4300	70	48	9	85	73 x 42	66 x 22	66 x 32	4-4	12

NOTE: Rating. All piping, flow and return, figured as radiating surface.



B3710

## IDEAL ARCO BOILERS

Hard Coal — Steam

No. 2-22-S BOILER (Patented)

## HARD COAL BOILERS

STEAM						WATER					
No.	Price Complete	Rat-ings (See Note)	Height (to top Outlet) Inches	One Outlet and Two Inlets Size Inches	Diam. Inches	No.	Price Complete	Rat-ings (See Note)	Height (to top Outlet) Inches	Outlets and Inlets Two Each Size Inches	
2-19-S	167.00	350	57	2½	30½	2-19-W	158.00	575	50¾	2½	
3-19-S	193.00	400	61½	2½	30½	3-19-W	184.50	650	54¾	2½	
2-22-S	226.00	525	58¾	3	35	2-22-W	217.50	875	52¼	3	
3-22-S	240.00	575	63¾	3	35	3-22-W	230.00	950	57¼	3	
2-25-S	277.50	625	61¾	3½	38	2-25-W	270.00	1025	55	3½	
3-25-S	300.00	700	66¾	3½	38	3-25-W	290.00	1150	60	3½	
2-28-S	360.50	900	62½	4	41¾	2-28-W	350.50	1500	55½	4	
3-2-S	389.50	1000	67¾	4	41¾	3-28-W	380.00	1650	60½	4	
2-31-S	470.00	1275	66	4	44½	2-31-W	457.50	2100	59	4	
3-31-S	500.00	1400	71¾	4	44½	3-31-W	495.00	2325	64¾	4	
2-34-S	530.00	1500	69	5	48¾	2-34-W	525.00	2475	61¾	5	
3-31-S	575.00	1650	75	5	48¾	3-34-W	565.00	2725	66¾	5	

## SOFT COAL BOILERS

1-19-S	140.50	275	52¼	2½	30½	1-19-W	131.50	450	45¾	2½	
1-22-S	193.00	400	54¾	3	35	1-22-W	184.00	650	48¼	3	
1-25-S	219.50	500	56¾	3½	38	1-25-W	210.50	825	50	3½	
1-28-S	331.00	800	57¾	4	41¾	1-28-W	321.00	1325	50½	4	
1-31-S	389.50	1000	60¾	4	44½	1-31-W	380.00	1650	54¼	4	
1-34-S	462.50	1250	64	5	48¾	1-34-W	450.00	2075	56¼	5	

Grate Diameter is indicated by the second figures of the numbers.

Size of Smoke Pipe for Boilers: With 19-inch grates, 8-inch; 22-inch and 25-inch grates, 9-inch; 28-inch and 31-inch grates, 10-inch; 34-inch grates, 11-inch.

NOTE: Ratings. All pipe, flow and return to be figured as radiating surface.

## IDEAL STANDARD WATER BOILERS

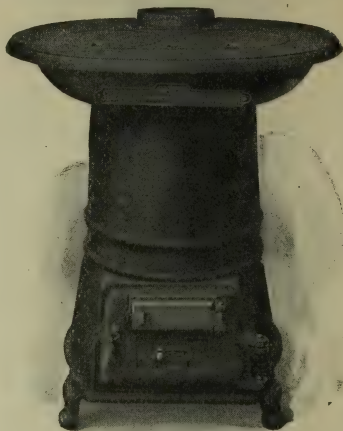
No. 3-24-W BOILER



B3715

## IDEAL LAUNDRY WATER HEATER

No. 1-C



B3718

Price Each, \$31.00.

See dimensions at bottom of page.

No.	Heights to Top Outlet, Inches	Diameter of Base Inches	Diameter of Grate Inches	Outlet and Inlet Inches	Smoke Pipe Inches	Ratings (See Note) Inches	List Prices
17-3-W	49 $\frac{1}{4}$	28 $\frac{3}{4}$	17	3	7	500	140.50
17-4-W	53 $\frac{1}{4}$	28 $\frac{3}{4}$	17	3	7	550	153.50
17-5-W	57 $\frac{1}{4}$	28 $\frac{3}{4}$	17	3	7	600	164.50
19-3-W	50	30 $\frac{1}{2}$	19	3	8	750	197.00
19-4-W	54	30 $\frac{1}{2}$	19	3	8	825	210.50
19-5-W	58	30 $\frac{1}{2}$	19	3	8	900	224.00
22-3-W	53	35	22	4	9	875	217.50
22-4-W	57 $\frac{1}{2}$	35	22	4	9	950	230.00
22-5-W	62	35	22	4	9	1025	270.00
25-3-W	54	38	25	4	10	1250	307.00
25-4-W	58 $\frac{1}{2}$	38	25	4	10	1350	325.00
25-5-W	63	38	25	4	10	1425	340.00
28-3-W	57	41 $\frac{3}{8}$	28	5	11	1500	350.50
28-4-W	62	41 $\frac{3}{8}$	28	5	11	1600	372.50
28-5-W	67	41 $\frac{3}{8}$	28	5	11	1700	389.50
31-3-W	58	44 $\frac{1}{8}$	31	5	12	1750	398.00
31-4-W	63	44 $\frac{1}{8}$	31	5	12	1950	431.00
31-5-W	68	44 $\frac{1}{8}$	31	5	12	2050	448.00
34-3-W	59	48 $\frac{1}{8}$	34	6	13	2350	501.50
34-4-W	64	48 $\frac{1}{8}$	34	6	13	2500	530.50
34-5-W	69	48 $\frac{1}{8}$	34	6	13	2650	555.00

## IDEAL LAUNDRY WATER HEATER — B3718

No. 1-C. Height Outlet, 21 $\frac{1}{8}$  in.;  
Diam. 27 $\frac{1}{2}$  in. over all; Water Con-  
nections, 1 in.; Smoke Pipe, 6 in.

NOTE: All pipes, flow and return are figured as radiating surface.



# WATER HEATERS

IDEAL JUNIOR  
Size No. 12  
Heater

IDEAL PREMIER  
JUNIOR  
Size No. 152 Heater

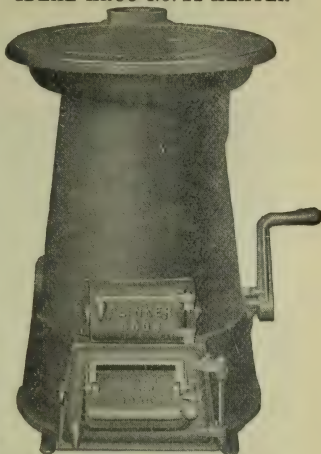
IDEAL ARCO No. 12 HEATER



B3720



B3723



B3725

IDEAL JUNIOR						IDEAL PREMIER JUNIOR						
No.	Height (to Top Outlet) Inches	Diam- eter Inches	Outlets Inches	Tank Capac- ity Gallons	Price Com- plete	No.	Height Inches	Diam- eter Inches	Outlets Inches	Smoke Collar Inches	Capac- ity Gallons	Price Com- plete
0	31	18	1-1½	100	34.00	0	31	18	1-1½	5	100	34.00
10	35	20¾	3-1½	150	57.00	101	29⅝	18	1-1½	5	200	37.00
12	39⅞	20¾	3-1½	250	73.00	121	37¼	24	3-1½	6	275	65.00
20	42⅞	22½	3-2	300	83.00	122	42½	24	3-1½	6	350	77.00
22	46⅞	22½	3-2	400	102.00	151	42⅞	25¾	3-2	6	450	89.00
30	42¾	26¼	3-2	525	114.00	152	47⅞	25¾	3-2	7	600	106.00
32	46¾	26¼	3-2	675	142.00	181	44¾	27	3-2	7	750	118.00

Nos. 0 and 101 are not provided with butterfly doors. No. 101 can be so equipped if specified in ordering. None of above Heaters has intermediate section.

Smoke Pipe No. 0, 5-in.; Nos. 10-22, 6-in.; Nos. 30-32, 7-in.

Nos. 0 to 12 have slide center grates; Nos. 20-32 have rocking grates.

No. fire tools supplied with these Heaters.

When soft coal is to be used for fuel, a size larger Heater should be selected than would be required for hard coal.

The amount of radiation a water heater will supply at manufacturer's established basis of rating can be estimated by dividing the tank capacity in gallons by 1.30, since it is generally accepted that a foot of radiation is equal to a tank capacity of 30 per cent more expressed in gallons, or 1.30 gallons.

## IDEAL ARCO WATER HEATERS

No fire tools supplied with these Heaters.

When soft coal is to be used for fuel, a size larger Heater should be selected than would be required for hard coal.

The amount of radiation a tank heater will supply at manufacturer's established basis of rating can be estimated by dividing the tank capacity in gallons by 1.30, since it is generally accepted that a foot of radiation is equal to a tank capacity of 30 per cent more expressed in gallons or 1.30 gallons.

Size	Height Outlet Inches	Widest Diam. Inches	Outlet and Inlet Inches	Smoke Collar Inches	Tank Capac- ity Gallons	Price Com- plete
10	21½	16	1½	5	85	33.00
12	22¾	19½	1½	5	130	37.00
15	24½	21½	1½	6	225	50.00

Measurements given approximate the space occupied by the Heater.



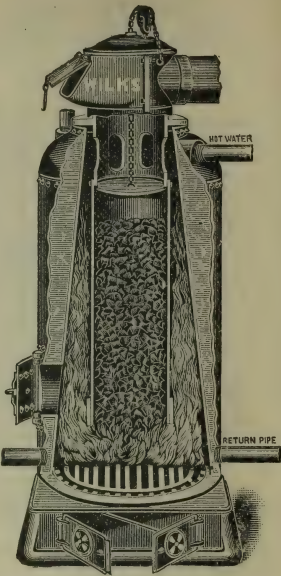


WILKS  
WATER  
HEATERS

For  
Greenhouse  
Heating, etc.

Small Steam Boilers  
quoted on application.

B3729



B3730

B3729 SMALL PATTERN NOT SELF FEEDING Size of Boiler, Inches	Heating Capacity Gallons Per Hour	Price	Size of Open- ings Inches	Heating Surface Square Inches	Approx. Heating Power 2-in. Pipe Feet	Height From Floor to top Inches	Approx Weight Pounds	
For Carving Tables, etc.....	10x18	40	21.00	¾	399	60	25¼	75
For Private Resi- dences, etc. ....	12x24	65	25.00	1	648	100	32¼	120
	12x30	75	26.50	1	792	125	38¼	130
Small Conservator- ies, Laundries, etc. }	14x30	100	30.00	1¼	945	150	40½	180
	14x36	125	32.00	1¼	1066	175	46¼	190

B3730. LARGE SELF-FEEDING SIZES

Size of Boiler Inches	Heating Capacity Gallons Per Hour	Price with Coal Magazine	Size of Openings Inches	Approx. Heating Power 4-in. Pipe Feet	Extreme Height of Heater Inches	Approx. Weight Pounds
16 x 30	130	57.50	1½	250	57	340
16 x 36	160	60.00	1½	300	63	380
20 x 30	200	72.00	2	425	60	445
20 x 36	250	75.00	2	450	64	500
20 x 42	300	80.00	2	500	70	530
24 x 36	350	105.00	2	700	66	700
24 x 42	400	110.00	2	900	72	740
30 x 42	600	130.00	3	1200	75	1230
30 x 48	700	135.00	3	1250	81	1280
36 x 42	900	185.00	3	1450	75	1950
36 x 48	1000	195.00	3	1550	81	2000
42 x 42	1200	215.00	3	2000	76	2600
42 x 48	1400	225.00	3	2400	82	2700

# ROCOCO ORNAMENTAL RADIATORS

For Steam and for Water

## SINGLE COLUMN



B3750

Each section is  $4\frac{1}{2}$  inches wide. Width of legs,  $5\frac{1}{2}$  inches.  
 Height, inch..... 38 32 26 23 20  
 Rad. surface, per section, square ft..... 3  $2\frac{1}{2}$  2  $1\frac{3}{4}$   $1\frac{1}{2}$

**Tapped**, 2 inch, and bushed as per B3787.

**Length of Radiators** is  $2\frac{1}{2}$  inch for each section (and add  $\frac{1}{2}$  inch for each bushing).

For Steam are connected at bottom with extra heavy right hand screw nipples.

For Water are connected at top and bottom with extra heavy slip nipples.\*

This pattern of Single-Column Radiators can be made in special shapes as follows: Concealed Brackets, for Steam or Water; Legs, Extra High Solid, for Steam; Marble Top, with Saddles, for Steam and Water.

Rococo Two-Column Radiators can be made in special shapes as follows: Legs, Extra High Solid, for Steam and Water; Marble Top, with Saddles, for Steam and Water.

\*Detroit and Litchfield Water 2-Col. have R. & L. Nipples.

## TWO COLUMN



B3751

Each section is  $7\frac{3}{8}$  inches wide. Width of legs,  $8\frac{1}{2}$  inches.  
 Height, inch.. 45 38 32 26 23 20  
 Rad. surface, per section, sq. ft..... 5 4  $3\frac{1}{2}$   $2\frac{3}{4}$   $2\frac{1}{2}$  2

# **ROCOCO ORNAMENTAL RADIATORS**

For Steam and Hot Water

## **THREE-COLUMN**

## **FOUR-COLUMN**



**B3752**

Each section is  $9\frac{1}{4}$  inches wide. Width of legs, 10 inches.

Height, inches....44 38 32 26 22 18  
Rad. surface, per section, sq. ft.... 6 5  $4\frac{1}{2}$   $3\frac{3}{4}$  3  $2\frac{1}{4}$

Length of Radiators,  $2\frac{1}{2}$  in. per section, and add  $\frac{1}{2}$  in. for each bushing.

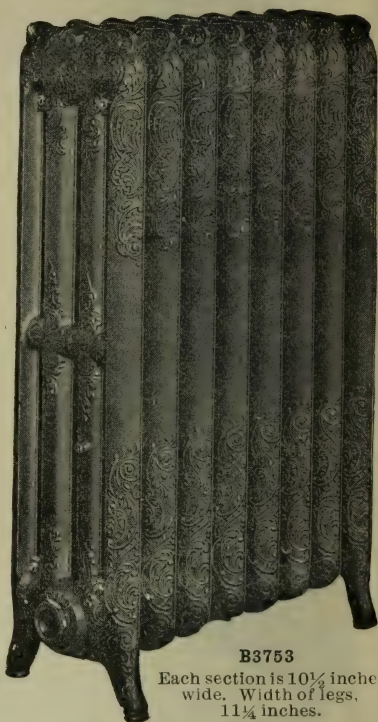
Tapped 2 in. and bushed per **B3787**.

All Rococo Radiators made at Detroit Plant are connected with extra heavy right and left hand threaded nipples. All Rococo Radiators made at other Plants are connected with extra heavy right hand threaded nipples for steam; extra heavy slip nipple for water.\*

Rococo Ornamental Three-Column Radiators are made at Detroit Plant in special shapes and on special orders as follows:

Carpet feet, for steam and water; circular, for steam and water; corner, for steam and water; curved, for steam and water; dining room, 44-in. height only, for steam and water; ventilating; legs, detachable high, for steam and water; legs, extra high solid, for steam and water (Pierce Plant); marble top lugs, for steam and water; marble top saddles, for steam and water (Pierce Plant); concealed brackets, for steam and water (Pierce Plant only).

\*Except, Litchfield Rococo 3-Col. Water has R. & L. Nipples.



**B3753**

Each section is  $10\frac{1}{4}$  inches wide. Width of legs,  $11\frac{1}{4}$  inches.

Height, inches....45 38 32 26 22 18  
Rad. surface, per section, sq. ft....10 8  $6\frac{1}{2}$  5 4 3

Length of Radiators, 3 in. per section, and add  $\frac{1}{2}$  in. for each bushing.

Tapped 2 in. and bushed per **B3787**.

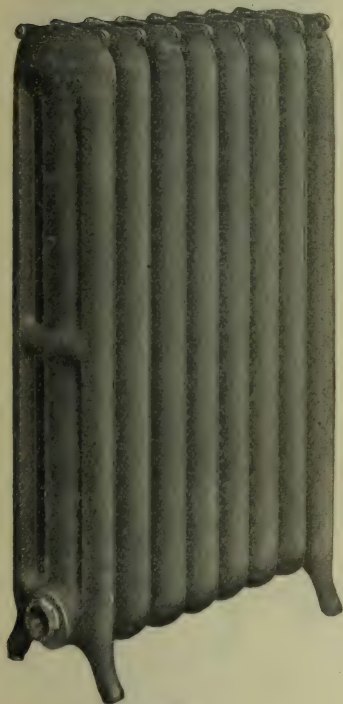
Connected at top and bottom with extra heavy slip nipples.

This pattern of Radiators is not made in any special or odd shapes, other than that same can be furnished with saddles for marble top.



# **ROCOCO THREE-COLUMN PLAIN RADIATORS**

For Steam and for Water



**B3755**

Dimensions. Radiating Surface. Tappings, and Prices same as for the Rococo Ornamental Three-Column B3752.

Connected with extra heavy right and left hand threaded nipples.

Rococo Plain Radiators are made in special shapes as follows: Circular, for Steam and Water; Corner, for Steam and Water; Curved for Steam and Water; Marble Top Lugs, for Steam and Water.

# **PERFECTION TWO-COLUMN RADIATORS**

For Steam

Made Ornamental or Plain  
Ornamental



**B3757**

Each section is  $7\frac{1}{4}$  inches wide. Width of legs  $9\frac{1}{4}$  inches.

Height inch.	45	38	32	26	23	20
Rad. Surface per Section,						

sq. ft.....	5	4	$3\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{1}{2}$	2
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Length of Radiator  $2\frac{1}{2}$  inch per section, add  $\frac{1}{2}$  inch for each bushing.

Tapped 2 inch and bushed per B3787.

Connected with extra heavy right and left hand threaded nipples.

**Perfection Radiators** are made in special shapes as follows: Carpet Feet, Cast-iron Top, Circular, Curved, Corner, Dining-room, 38 in. height; Direct-Indirect, 38 and 26-in. heights; Legs, detachable high; Marble Top, with Lugs; Stairway, Window.



# PEERLESS RADIATORS

Plain

For Steam and for Water

SINGLE COLUMN

TWO COLUMN



**B3760**

Each section is  $4\frac{1}{2}$  inches wide.  
Width of legs  $5\frac{1}{2}$  inches.

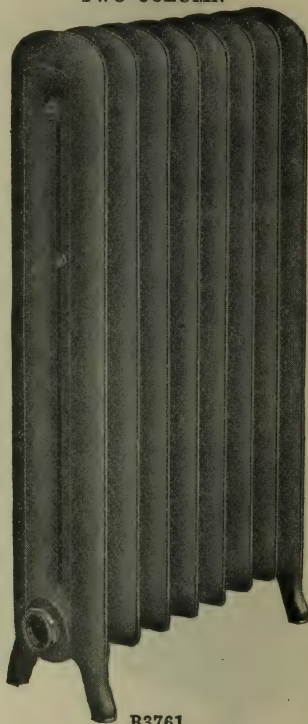
Height, inches.....	38	32	26	23	20
Rad. surface, per section, sq. ft.....	3	$2\frac{1}{2}$	2	$1\frac{1}{2}$	$1\frac{1}{2}$

Length of Radiators,  $2\frac{1}{2}$  in. per section, and where bushed (see below) add  $\frac{1}{2}$  in. for each bushing.

The Steam Radiators are tapped solid as per table **B3787**, except with high legs are tapped 2 in. and bushed. The Water Radiators are tapped 2 in. and bushed.

Connected at top and bottom with extra heavy slip nipples for Water; and extra heavy right-hand threaded nipples at bottom for Steam.

Peerless Single and Two-Column Radiators are made in special shapes as follows: Circular, for Steam only; Concealed Bracket, for Steam and Water; Corner, for Steam only; Curved, for Steam only; Legs, Extra High Solid, for Steam (Two Column also for Water); Marble-Top, with Saddles for Steam and Water; Stairway, for Steam only; Window, for Steam only.



**B3761**

Each section is  $7\frac{3}{4}$  inches wide.  
Width of legs  $8\frac{1}{2}$  inches.

Height, inches	45	38	32	26	23	20	15
Rad. surface, per section, sq. ft.....	5	4	$3\frac{1}{3}$	$2\frac{2}{3}$	$2\frac{1}{3}$	2	$1\frac{1}{2}$

Length of Radiators  $2\frac{1}{2}$  in. per section, and add  $\frac{1}{2}$  in. for each bushing.

Tapped 2 in. and bushed per **B3787**.

Connected at top and bottom with extra heavy slip nipples for Water; and extra heavy right-hand threaded nipples at bottom for Steam.

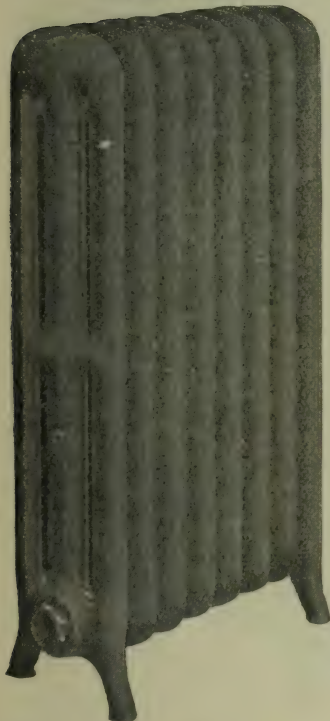
Peerless Single and Two-Column Radiators are made in special shapes as follows: Circular, for Steam only; Concealed Bracket, for Steam and Water; Corner, for Steam only; Curved, for Steam only; Legs, Extra High Solid, for Steam (Two Column also for Water); Marble-Top, with Saddles for Steam and Water; Stairway, for Steam only; Window, for Steam only.

# PEERLESS RADIATORS

Plain

For Steam and for Water

## THREE COLUMN



**B3762**

Each section is 9 inches wide.  
Width of legs, 10 inches.

Height, in.....	44	38	32	26	22	18
Heating surface per section, sq. ft.....	6	5	4½	3¾	3	2¼

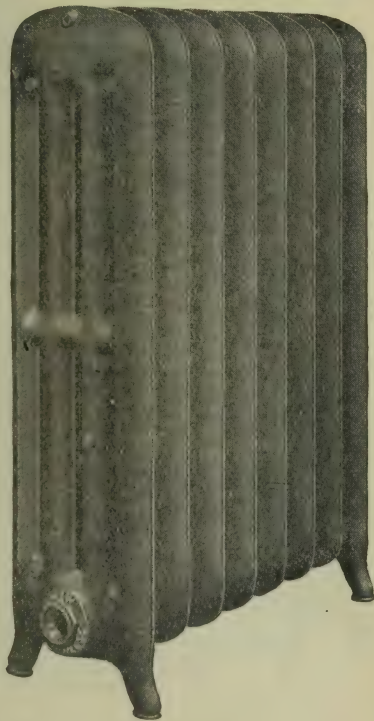
Length of Radiators 2½ in. per section,  
and add ½ in. for each bushing.

Tapped 2 in. and bushed per **B3787**.

Connected with extra heavy slip nip-  
ples.

Can be furnished with Saddles for Mar-  
ble Tops. Three Column can be furnish-  
ed with Concealed Bracket.

## FOUR COLUMN



**B3763**

Each section is 10½ inches wide.  
Width of legs, 11¼ inches.

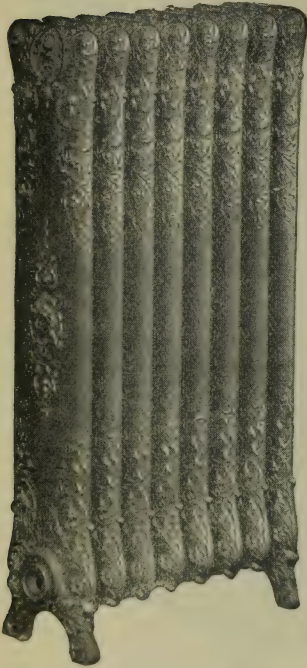
Height, in.....	38	32	26	23	20
Heating surface per section, sq. ft.....	8	6¾	5½	4¾	4

Length of Radiators, 2¾ in. per sec-  
tion, and add ½ in. for each bushing.

Tapped 2 in. and bushed per **B3787**.

**VERONA STEAM AND  
WATER RADIATOR**

Ornamental  
Patented Nov. 3, 1896

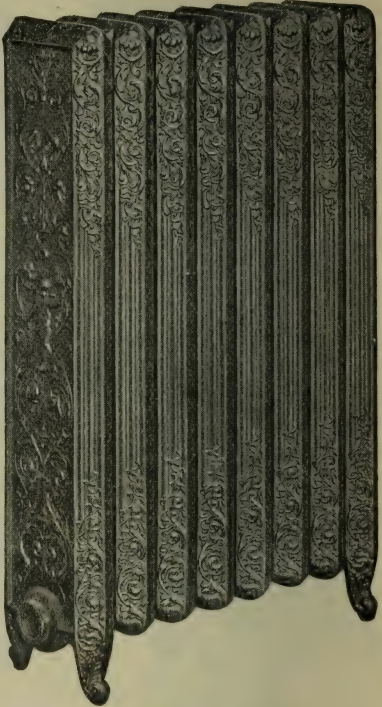


**B3770**

Each section is 8 inches wide. Width of legs, 8½ inches.  
Height, inch..... 38    33    26    20  
Heating surface per section, sq. ft..... 4    3¼    2¾    2  
Length of Radiators 2½ inch per section and add ½ inch for each bushing.  
Tapped 2 inch and bushed per B3787.  
Connected with extra heavy right and left hand threaded nipples.

Verona Radiators are made in special shapes as follows: Curved, for Steam and Water; Corner, for Steam and Water; Legs, Detachable High, for Steam and Water; Marble Top, with Lugs, for Steam and Water.

**ITALIAN  
FLUE ORNAMENTAL  
RADIATORS**  
For Steam and Water



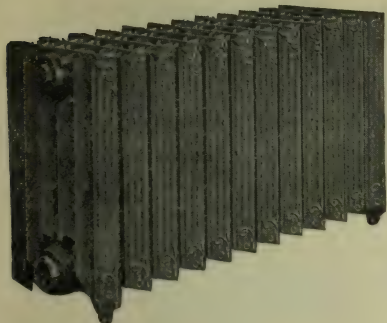
**B3771**

Patented October 20, 1896

Each section is 8½ inches wide. Width at legs 8½ inches.  
Height, inch.... 38    32    26    20  
Heating surface per section, sq. ft..... 7    5¾    4½    3¼  
Length of Radiator 3 inch per section and add ½ inch for each bushing.  
Tapped 2 inch and bushed per B3787.  
Connected with extra heavy right and left hand threaded nipples.

Italian Flue Radiators are made Corner for Steam and Water. Curved for Steam and Water. Legs, Detachable High, for Steam and Water; Marble Top, Lugs for Steam and Water.





## AETNA FLUE WINDOW RADIATORS

For Steam or Water

**B3772**

Each section is 12½ inches wide,

Height, inches.....	20	18	16	14	13
Heating surface, per section, sq. ft....	6	5½	4¾	4	3¾

Length of Radiators, 3 in. per section, and add ½ in. for each bushing.

Tapped 2 in. and bushed per **B3787**.

Connected with extra heavy right and left screw nipples.

Aetna Flue Radiators can be furnished **Curved** or **Corner**.

Distance from floor to center of tapping: Single-Pipe Steam, 2½ inches; double-Pipe Steam, 3 inches supply, 2½ inches return: Water, supply and return, 3 inches.

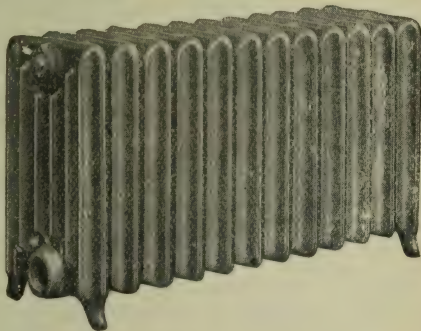
Top of each leg section has 1½-inch plug, which can be taken out to make top connection when desired.

## ROCOCO WINDOW RADIATORS

For Steam or Water

**B3775**

Each section is 12½ inches wide.



Height, inches.....	20	13
Heating Surface, per section, sq. ft..	5	3

Length of Radiators, 3 in. per section, and add ½ in. for each bushing.

Tapped 2 in. and bushed as per **B3787**.

Floor to center of all tapplings, 3 inches.

Steam Radiators tapped 1½ inch or smaller are fitted with eccentric bushings on supply end for single-pipe, and on return end for double-pipe; then, the distance from floor to center of 1½-inch tapping will be 2¾ inches; 1¼-inch tapping, 2¾ inches; 1-inch tapping, 2¾ inches; ¾-inch tapping 2½ inches.

As made at Detroit Plant these Radiators are connected with extra heavy right and left-hand threaded nipples. As made at Pierce Plant these Radiators are connected with slip nipples.

Top of each leg section has plug which can be taken out to make top connection when desired.



PRICE LIST AMERICAN DIRECT RADIATORS  
LIST B3780

Per Square Foot of Heating Surface. Subject to Change Without Notice  
Showing Square Feet of Heating Surface to the Section

Height..... inches	45	44	38	32	26	23	22	20	18	16	14	13
Price..... per square foot	.41	.41	.42	.46	.50	.53	.53	.57	.58	.60	.64	.66
<b>Single-Column:</b>												
Peerless and National, S. and W.....			3	2½	2	1¾		1½				
Rococo, Ornmtl., S. & Water.....			3	2½	2	1¾		1½				
<b>Two-Column:</b>												
Peerless, S. and W.....	5		4	3½	2¾	2½		2				
Perfection, Ornmtl. and Plain, S.....	5		4	3½	2¾	2½		2				
Rococo, Ornamental, S. and W.....	5		4	3½	2¾	2½		2				
Verona, S. and W.....			4	3½	2¾	2½		2				
National, S. and W.....	5		4	3½	2¾	2½		2				
<b>Three-Column:</b>												
Peerless, S. or W.....		6	5	4½	3¾		3		2¼			
Rococo, Ornmtl. and Plain, S. and W.....		6	5	4½	3¾		3		2¼			
<b>Four-Column:</b>												
Peerless, S. or W.....			8	6¾	5½	4¾		4				
Rococo, Ornmtl., S. or W.....	10		8	6½	5		4		3			
<b>Flue and Window:</b>												
Aetna Flue, S. or W.....								6	5½	4¾	4	3¾
Italian Flue, Ornmtl., S. and W.....			7	5¾	4½			3¾				
Rococo Window, S. or W.....								5				3

The locations of the figures in the above columns in line with the names of patterns of Radiators indicate the heights in which the various patterns are made. The figures themselves represent the amount of heating surface contained in each height section.

ROCOCO WALL RADIATORS

Per Square Foot

Extra large section, 9 square feet; Standard section, 7 square feet;	
Small section, 5 square feet .....	.42

PRICE LIST OF AMERICAN INDIRECT RADIATORS

Per Section

Primus, water, 8 square feet.....	2.16
Excelsior, steam and water, 12 square feet.....	3.24
Excelsior Jr. steam, 8 square feet.....	2.16
Perfection Pin, Standard Size, steam or water, 10 square feet.....	2.70
Perfection Pin, Extra Large, steam or water, 15 square feet.....	4.05
Cardinal, steam or water, 15 square feet.....	4.05
Sterling, steam or water, 20 square feet.....	5.40
Sanitary School Pin, steam or water, 20 square feet.....	5.40

Extra for assembling Indirect Radiators, 1c per ft. net.

EXTRA FOR SPECIALTIES. LIST B3785

Made at Detroit Plant, Pierce Plant, and Standard Plant

Add to Net Prices on following Direct Radiators: Rococo, Peerless, Perfection, National, Verona, Italian Flue, and Aetna Flue.

Steam

Circular..... per section,	.58
Curved.....	.58
Window.....	.16
Stairway.....	.34
Corner..... per corner	3.80

Water or Water Patterns  
used for Steam

Circular..... per section,	.92
Curved.....	.92
Window.....	.32
Corner..... per corner	4.75

Perfection Radiator Tops (made at Detroit Plant), 15 cents per Section.

Carpet Feet Attachment (made at Detroit Plant), \$1.00 each.

Saddles, steam and water, for Pierce Plant Radiators (made at Pierce Plant), 50 cents per pair.

For Radiators with Legs Higher or Lower than regular, extra per leg section, all plants, 53 cents.

# TAPPINGS DIRECT RADIATORS. LIST B3787

For Steam, One Pipe Work. Radiators containing 24 square feet and under, 1 inch; above 24 to 60 square feet, 1½ inch; above 60 square feet to 100 square feet, 1½ inch; above 100 square feet, 2 inch.

Two Pipe Work. 48 square feet and under, 1 x ¾ inch; above 48 square feet to 96 square feet, 1½ x 1 inch; above 96 square feet, 1½ x 1½ inch.

For Hot Water, Tapped for Supply and Return. Radiator containing 40 square feet and under, 1 inch; above 40 square feet to 72 square feet, 1½ inch; above 72 square feet, 1½ inch.

Regularly tapped at bottom, can be top and bottom, or top, or for steam, two tap-pings at bottom at one end.

## Distance from Floor to Center of Tapping. List B3788

\*Rococo. Single Column, Two Column and Three Column. Verona. Italian Flue.

\*Peerless and National. Single Column and Two Column. Perfection.

All of above for water, 4½ inches floor to center of tappings. For steam, one pipe, 4 inches, and for two pipe flow 4½ inch and return 4 inches.

\*Rococo Four Column and Peerless Three and Four Column have all tappings for water or steam 4½ inches floor to center.

\*For Rococo Window and Aetna Flue, see information with illustrations.

## CIRCULAR RADIATORS

## CORNER RADIATORS

For prices see extras, List B3785



B3790

Peerless Single-Column (steam only),  
Peerless Two-Column (steam only),  
Perfection.  
Rococo Three Column.

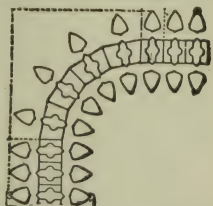
Made in all heights as follows:

National Single and Two-Column (steam only).

Detroit Ornamental Fluted Wide-top (per illustration), 38-inch height only,



B3792—Diagrams showing Corner made of Three Sections.



B3793—Showing Corner made of Four Sections.

When ordering Corner Radiators state how many sections are to be built into corner. State how many sections wanted in right wing also in left wing, when facing the inside of corner. Don't count the corner sections in the wings. State which is supply end and which the return end. Send pencil sketch.

## DINING ROOM RADIATORS

## DETROIT ORNAMENTAL FLUTED

Made in 38-inch height only, Steam and Water.

**B3796**



(Illustration is of a Detroit Ornamental Fluted Radiator)

Oven has three shelves or racks, each  $25\frac{1}{2}$  inches long,  $12\frac{3}{8}$  inches wide, with  $8\frac{3}{4}$  inches spaces between.

Outside or extreme depth of oven or closet is 13 inches, which fact should be borne in mind by fitters when arranging for connections, so that distance from wall to center of tapping shall not be less than  $6\frac{1}{2}$  inches.

## ROCOCO THREE-COLUMN, B3797

Steam and Water, 44 inches high

## PERFECTION, B3798

Steam, 38 inches high

Number .....	00	0	1	2	3	4	5	6	7	8
Rococo, length in *....	.....	.....	$22\frac{1}{2}$	$27\frac{1}{2}$	$32\frac{1}{2}$	$37\frac{1}{2}$	$42\frac{1}{2}$	$47\frac{1}{2}$	$52\frac{1}{2}$	$57\frac{1}{2}$
Heat'g surface, sq. ft.	.....	.....	$43\frac{1}{2}$	$55\frac{1}{2}$	$67\frac{1}{2}$	$79\frac{1}{2}$	$91\frac{1}{2}$	$103\frac{1}{2}$	$115\frac{1}{2}$	$127\frac{1}{2}$
Perfection, length in.*	25	30	35	40	45	50	55	60	65	.....
Heat'g surface, sq. ft.	13	21	29	37	45	53	61	69	77	.....

\*In estimating length allow  $\frac{1}{2}$  inch for each bushing.

## ROCOCO DINING ROOM RADIATORS

No. 1 is not made in Hot Water pattern.

These Radiators are tapped 2 inches and bushed as per list B3787.

Oven is about 10 inches high, has two shelves  $17\frac{1}{4}$  inches long,  $10\frac{1}{2}$  inches wide, with 5 inches space between.

The outside width of oven is 12 inches, and this fact should be borne in mind by fitters when arranging for connections, so that distance from center of tapping to wall shall not be less than 6 inches.

See next page for Perfection Dining Room Radiators; also Price List.

Number	* Length, inches	Heating Surface, square feet
1	$30\frac{1}{8}$	$33\frac{1}{2}$
2	$34\frac{1}{6}$	42
3	$39\frac{1}{8}$	$50\frac{3}{4}$
4	$43\frac{1}{8}$	$59\frac{1}{2}$
5	$48\frac{3}{8}$	68
6	$53\frac{3}{8}$	$76\frac{3}{4}$
7	$57\frac{1}{6}$	$85\frac{1}{2}$
8	$62\frac{1}{8}$	94
9	$67\frac{1}{8}$	$102\frac{3}{4}$
10	$71\frac{1}{6}$	$111\frac{1}{2}$

\*Add  $\frac{1}{2}$  inch for each bushing. Centre of tapping to floor same as two column Rococo B-3788.

Above Radiators are tapped 2 inches and bushed according to list B-3787.



# DINING ROOM RADIATORS, (CONTINUED)

## PERFECTION DINING ROOM RADIATORS

Above Radiators are tapped 1½ inches and bushed as per list B3787.

In upper portion of oven are two shelves each 20¾ inches long, 13 inches wide, 9 inches space between. In lower portion one shelf of same measurement.

The outside width of oven is 13¾ inches, and this fact should be borne in mind by fitters when arranging for connections, so that distance from center of tapping to wall shall not be less than 6½ inches.

Distance from floor to center of tapping, 4½ inches.

## PRICE LIST OF DINING ROOM RADIATORS—Made at Detroit Plant

Number .....	00	0	1	2	3	4	5	6	7	8
Detroit, Steam, 38 in. ....			42.00	46.00	50.00	54.00	58.00	62.00	66.00	70.00
Detroit, Water, 38 in. ....			48.00	52.50	57.00	61.50	66.00	70.50	75.00	79.50
Perfection, Steam or Water, 38 in. ....	38.00	43.00	48.00	53.00	58.00	63.00	68.00	73.00	78.00	.....
Rococo, Steam, 44 in. ....			53.00	58.00	63.00	73.00	83.00	93.00	103.00	113.00
Rococo, Water, 44 in. ....				58.00	63.00	73.00	83.00	93.00	103.00	113.00

Nos. 9 and 10 quoted on application.

## BRACKET RADIATOR For Steam and Water

## PEERLESS SIDE WALL RADIATORS For Steam and Water

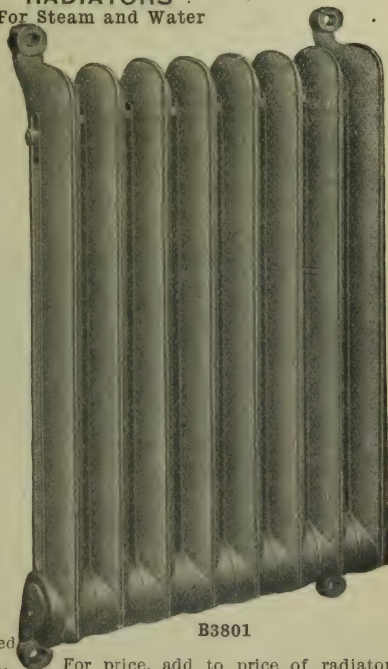


B3800

All AMERICAN Radiators can be fitted with these Brackets on special orders.

NOTE.—These are regular pattern radiators with the feet cut off.

For description of Brackets see B3806 and 3807



B3801

For price, add to price of radiator \$1.50 net for each end or leg section. Radiators over 20 sections should have an intermediate leg section.

Made in 38, 32, 26, 23 and 20 inch.

Wall to outer edge of bead 5½ inches. Tapped 2 in. bushed per B3787.



**CURVED RADIATORS**

Aetna Flue

**B3803**

For prices see extra list B3785

Curved Radiators are made in all heights of patterns as follows:

Italian Flue.

Peerless, Single-Column (steam only).

Peerless, Two-Column (steam only).

Perfection.

Rococo Three-Col. Ornamental and Plain.

Verona.

National Single-Column (steam only).

National Two-Column (steam only).

NOTE.—In ordering Curved or Corner Radiators, specify the exact radius or angle at the base-board within which the Radiator is to be placed.

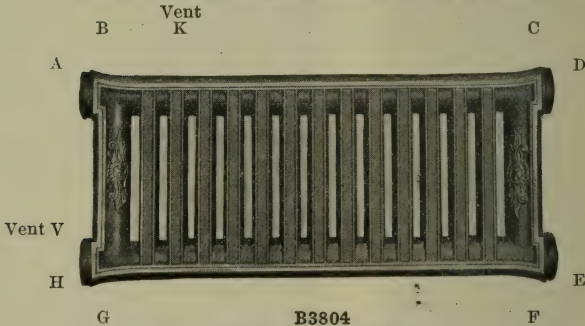
It is important that a heavy paper template showing exact size and radius of each curved radiator shall accompany the order and showing which is the flow or inlet end and which the return end.

**AMERICAN WALL RADIATORS**

For Steam or Water

**ROCOCO PATTERN**

Showing Tapping Bosses on short sides, A, D, E, H and V.

**B3804**

For prices see list B3780.

(Can be furnished tapped with bosses on the long sides same as B, C, G, F and K.)

(Location of air vent boss determines location of letter indicating tapping hub.)

(See Some Possible Arrangements of Wall Radiators, B3808, BB3809.)

Wall Radiators are especially adapted for use on ships, in narrow halls, bathrooms, alcoves, or similar locations where a wide Radiator could not be employed. The extreme depth is only 2½ inches (or 3¼ inches including bracket projection), so that it completely satisfies the architectural demand for a Radiator which can be fixed quite close to the wall. As the Radiator is supported by brackets fastened to the wall at any height, no floor space is occupied.

Rococo Wall Radiator sections are made for two methods of interconnection as follows: the vertical section is tapped on the long sides at B, C, G and F; the horizontal section is tapped on the short sides at A, H, D and E. A, B, C and H are right-hand tapings; D, E, F and G are left-hand tapings.

When more than four tapings are required in one section an extra charge is made for the extra tapings, at 10c each net.

# BRACKETS

## B3805—For Rococo Wall Radiators

### Footed Vertical Brackets "J"

To fit over a 9½-inch high base-board or skirting, and for supporting Wall Radiators, erected vertically. With each "J" Bracket we furnish one ¼-inch stove bolt and one button which holds the Radiator in position.

Height from floor to center of supply or return end of lowest tapping:

No. J-1 Bracket.....	9½ in.	Each,	.40
No. J-2 Bracket.....	7½ in.	"	.36
No. J-3 Bracket.....	5½ in.	"	.30

### Footed Horizontal Brackets "K"

To fit over base-board or skirting, and for supporting Wall Radiators erected horizontally.

With each "K" Bracket we furnish one ¼-inch stove bolt and one button. Height from floor to center of supply or return end of lowest tapping:

No. K-1 Bracket will fit over 11½ in. high base-board or skirting 16 in.....	Each,	.41
No. K-2 Bracket " " " 9½ in. " " " 14 in.....	"	.42
No. K-3 Bracket " " " 7½ in. " " " 12 in.....	"	.40
No. K-4 Bracket " " " 5½ in. " " " 10 in.....	"	.38
No. K-5 Bracket " " " 3½ in. " " " 8 in.....	"	.36
No. K-6 Bracket " " " 1½ in. " " " 6 in.....	"	.34

Bracket "L" or "O" each, \$0.10      Bracket "M" each, \$0.10

Bracket L. or O. screwed to wall, base-board or wainscoting, supports radiators set either horizontally or vertically. They are slotted for four wood screws—not furnished by us.

Bracket M. screwed to wall, base-board or wainscoting, and intended to be used as a guide or to hold in position radiator supported by Bracket "L" or "O." Each section requires for its proper support one "L" or "O" and one "M" Bracket. The "M" Bracket is slotted for two wood screws—not supplied by us.

Bracket "N." Price each, \$0.30

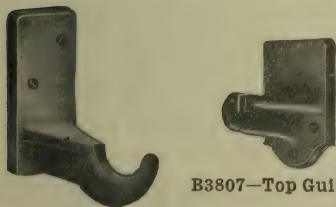
Is a straight right-angle Bracket, without offset, for supporting Wall Radiators erected vertically or horizontally; height from floor to center of end tapping bosses, 5½ inches. With each "N" Bracket we furnish one ¼-inch stove bolt and one button.

Ceiling Bracket or Hanger "P." (Not illustrated) Price each, \$0.50

NOTE.—In ordering buttons and stove bolts separately from brackets, it is necessary to state for which bracket they are wanted, as different lengths of bolts are used for the different brackets.

## CONCEALED BRACKETS—For Direct Radiators

See illustration B3800.



B3807—Top Guide

They are made for supporting Single, Two-Column, Three-Column, Four-Column Direct Radiators of all patterns of American Radiators. Distance from wall to center of tapping in radiator is—in the Single-Column, 3 inches; Two-Column, 5 inches; Three-Column, 5¾ inches; Four-Column, 6½ inches. A set consists of one each top and bottom support as shown in illustration. Ordinarily two sets will support a medium size of radiator.

B3806—Bottom Support

Price Per Pair. (One Support and One Top Guide.) For Single-Column Radiators, \$0.80; Two-Col., \$1.50; Three-Col., \$1.80; Four-Col., \$2.00.

## SHOWING SOME OF THE POSSIBLE ARRANGEMENTS OF WALL RADIATORS

B3803

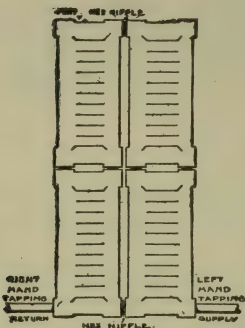


Fig. 19

Assembled Four Horizontal Sections in Two Tiers Water.

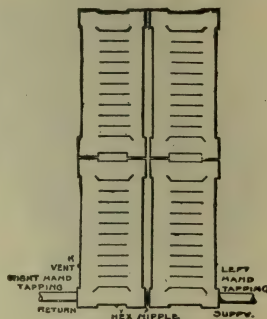


Fig. 20

Assembled Four Horizontal Sections in Two Tiers One and Two-pipe Steam.

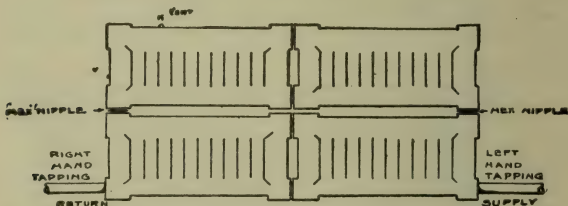


Fig. 21. Assembled Four Horizontal Sections in Two Tiers Water.

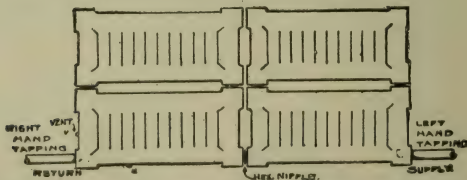


Fig. 22. Assembled Four Vertical Sections in Two Tiers One and Two-pipe steam.

American Wall Radiators are tapped  $1\frac{1}{2}$  inches supply and return, and unless otherwise ordered, will be bushed according to regular tapping list B3787. Tappings other than those illustrated will be charged extra—10 cents each, net.

If radiators are to be assembled differently from any of the sketches shown on these pages please send pencil sketch with order, and be careful to show exact location of flow and return connections.

# SHOWING SOME OF THE POSSIBLE ARRANGEMENTS OF WALL RADIATORS

B3809

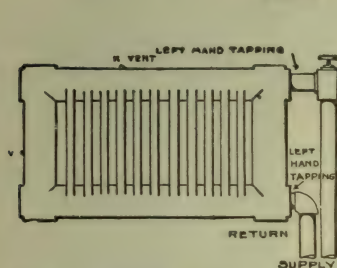


Fig. 9. Horizontal Water.

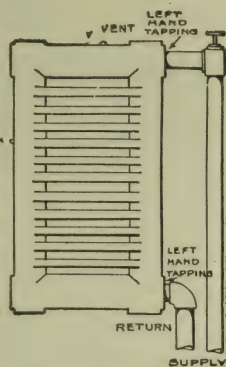


Fig. 10. Vertical Water.

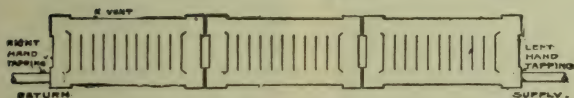


Fig. 11. Assembled Three Horizontal Sections in Single Tier Water.

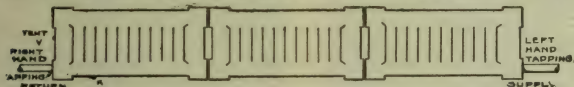


Fig. 12. Assembled Three Horizontal Sections in Single Tier One and Two-pipe Steam

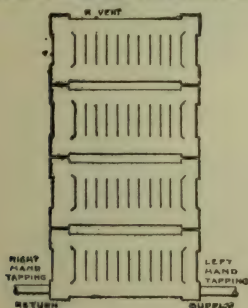


Fig. 15. Assembled Four Vertical Sections in Four Tiers Water.

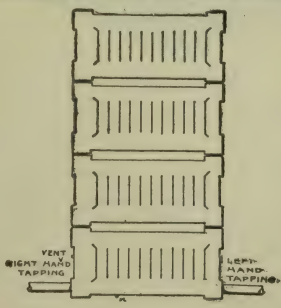


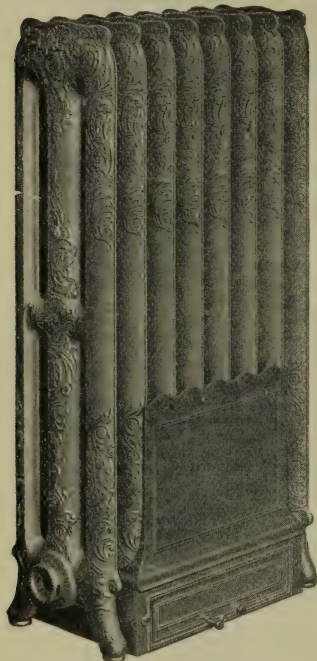
Fig. 16. Assembled Four Vertical Sections in Four Tiers One and Two-pipe Steam.

If radiators are to be assembled differently from any of the sketches shown on these pages, please send pencil sketch with the order, and be careful to show exact location of flow and return connections.



## VENTILATING RADIATORS

With New Adjustable Box-Base.  
Front View—Rococo Three-Column  
Orna. Radiator



**B3812**—(See B3820.)

The Bases and plates are made for Rococo One, Two and Three-Column, Peerless One, Two and Three-Column; National One and Two-Column Radiators.

This improved Ventilating Base for American Radiators is made in portable form as illustrated in detail view shown B3820. This base is easily adjusted under stock Radiators as above without making any changes to the Radiator itself. The Bases and corresponding front and back plates are regularly made in eight sizes to supply air circulation to Radiators of from five to twelve sections of the Radiators named above. They fit under regular stock Radiators of more than five sections and with reference to amount of air supply required rather than full size of Radiator. Thus a 5-section Box-Base can be adjusted to a Radiator of 7, 9 sections or larger (in odd sections); a 10-section Box-Base fits a Radiator of 12 sections or larger (in even sections), and so on. A detailed view of Base appears B3820.

The two plates which are adjusted to the front and back of the Radiator on top of the Base are held in place by bolts running through the center or corners of the plates, which can be readily removed for cleaning.

## ITALIAN ORNA. FLUE VENTILATING RADIATORS

For Steam and Water



**B3813**

Heights are  $1\frac{1}{2}$  inch greater than listed B3771.

Each section is  $8\frac{1}{2}$  inches wide.

Connected with extra-heavy right and lefthand threaded nipples.

This pattern of Radiator is not made in any special or odd shape, as the Box-Bases can only be made in straight form.

In ordering please state whether back or bottom inlet is required.

# ITALIAN FLUE BOX-BASES



**B3815**

Showing Rear Half of Box-Base and Dampers.  
Back Air-Inlet Closed.  
(Patent applied for.)

No.	Base Section	Outside of Flange Inlet *Inches	Each
B-1	12	24 $\frac{1}{4}$ x 3 $\frac{3}{4}$	4 80
B-2	11	21 $\frac{1}{4}$ x 3 $\frac{3}{4}$	4 40
B-3	10	18 $\frac{1}{4}$ x 3 $\frac{3}{4}$	4 00
B-4	9	15 $\frac{1}{4}$ x 3 $\frac{3}{4}$	3 60
B-5	8	14 $\frac{1}{4}$ x 3 $\frac{3}{4}$	3 20
B-6	7	11 $\frac{3}{8}$ x 3 $\frac{3}{4}$	2 80
B-7	6	9 x 3 $\frac{3}{4}$	2 40
B-8	5	6 x 3 $\frac{3}{4}$	2 00
B-9	4	5 $\frac{5}{8}$ x 3 $\frac{3}{4}$	1 60
B-10	3	2 $\frac{1}{4}$ x 3 $\frac{3}{4}$	1 20

\*Outside measurements of flange or lip around back air-inlet of Box-Base, for attaching sheet-iron sleeve or pipe, are:



**B3816**

Box-Base, showing Operation of Dampers.  
For Bottom Air-Inlet.  
(Patent applied for.)

No.	Base Section	Flooropening for Damper †Inches	Each
F-1	12	24 $\frac{1}{8}$ x 3 $\frac{7}{8}$	4 80
F-2	11	21 $\frac{1}{8}$ x 3 $\frac{7}{8}$	4 40
F-3	10	18 x 3 $\frac{7}{8}$	4 00
F-4	9	15 $\frac{1}{8}$ x 3 $\frac{7}{8}$	3 60
F-5	8	14 $\frac{3}{8}$ x 3 $\frac{7}{8}$	3 20
F-6	7	11 $\frac{3}{8}$ x 3 $\frac{7}{8}$	2 80
F-7	6	8 $\frac{1}{2}$ x 3 $\frac{7}{8}$	2 40
F-8	5	6 $\frac{1}{8}$ x 3 $\frac{7}{8}$	2 00
F-9	4	5 $\frac{1}{2}$ x 3 $\frac{1}{2}$	1 60
F-10	3	3 $\frac{1}{4}$ x 3 $\frac{1}{2}$	1 20

†Where air conduit is brought up through floor, under radiator, the opening in floor to be covered by dampers in Base should be:

NOTE.—12-Section Box-Base is to be used for radiator of twelve sections, or any EVEN number of sections larger. 11-Section Box-Base for radiator of eleven sections, or any odd number of sections larger. Bottom of back air-inlet opening is one inch above floor level. In ordering Box-Bases to be placed in middle of long Radiators, note that, for instance, to cover six flues or middle sections requires an 8-section Base, to cover seven flues or middle sections requires 9-section Base, etc.

## FOR ROCOCO ONE, TWO, THREE AND FOUR-COLUMN PEERLESS ONE, TWO AND THREE-COLUMN AND NATIONAL TWO-COLUMN

(See B3812)

With New Adjustable Box-Base. Front View—with Rear Wall Collar and Damper.



**B3820**

\*Fits Radiator of

Sect.	5	6	7	8	9	10
Price	5.00	6.00	7.00	8.00	9.00	10.00

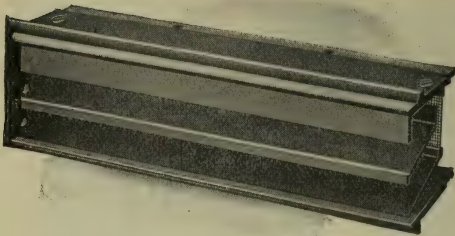
\*Fits Radiator of

Sect.	11	12	13	14	15
Price	11.00	12.00	13.00	14.00	15.00

\*See number of sections adaptable to B3812.

The Base can be furnished with either an opening and damper in the back (as shown in above cut) or in the floor under the Radiator, as may be desired.

## WALL BOXES



B3822

Price, each.....\$2.80

These are substantially constructed, and their angle slats and inside brass-wire screen render them storm and insect proof. Outside measurement of Wall Box is 5x17½ inches to conform with brick measure. The outside measurement of the flange is 4¼x17 inches.

## FLOOR DAMPERS

B3824

For Perfection and Rococo Direct-Indirect Radiators



Quoted on application. State size of radiators, etc.

## SADDLES FOR MARBLE TOPS

For Steam Radiators, also for Hot-Water Radiators.

For Peerless Single-Column. Two-Column. Three-Column. Four-Column. Rococo Ornamental. National Single-Column and National Two-Column.

They afford a rest or support upon which marble tops can be placed. Two of these Saddles are usually sufficient for a radiator, but in the case of a radiator of 15 sections or more it is advisable to use three saddles—one in the center and one at either end.

We are also prepared to furnish cast iron Saddles for Zenith Window Flue Radiators.

## LUGS FOR MARBLE TOPS

The following patterns are, when so specially ordered, arranged with lugs on top of leg sections for holding marble tops; Italian Flue, Perfection, Verona, Rococo (Detroit Plant).

## PEDESTALS

Made at Pierce Plant

Pedestals to fit under legs of all styles and heights of any of our Direct Radiators can be furnished in the following heights: ½, ¾, 1, 1¼, 1½, 1¾, 2, 2¼, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8 and 9 inches.

Made at Detroit Plant

Pedestals to fit under legs of all styles and heights of any of our Direct Radiators can be furnished in the following heights: ½, ¾, 1, 1¼, 1½, 1¾, 2, 2¼, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 8½, and 9 inches.



B3829

Price Each

½, ¾ and 1 inch Pedestals.....	.10	4 and 4½ inch Pedestals.....	.30
1¼ inch Pedestals.....	.12	5 and 5½ inch Pedestals.....	.32
1½ and 1¾ inch Pedestals.....	.14	6 and 6½ inch Pedestals.....	.36
2, 2¼, and 2½ inch Pedestals....	.20	7 and 7½ inch Pedestals.....	.40
3 and 3½ inch Pedestals.....	.24	8, 8½, and 9 inch Pedestals.....	.44



## EXTRA HIGH SOLID LEGS

Extra High Solid Legs as shown by illustration on this page can be furnished, on special order only, in all heights of

National . . . . . One and Two Column  
Peerless . . . One, Two, Three, and Four Column  
Rococo . . . . One, Two, Three, and Four Column  
Zenith Zenith Window

so that distance from floor to center of tapping will be 5, 5½, 6, 6½, 7, 7½, or 8 inches, as ordered.

These Radiators with Extra High Solid Legs are tapped 2 inches and bushed according to list B3787.

NOTE: In ordering Radiators having extra high solid legs, always give distance required from floor to the center of what is to be the supply tapping of Radiator; and when for Steam, be sure to state whether for one or two-pipe work.



**B3830**  
**Extra High Solid Legs**  
See List B3785

## DETACHABLE HIGH LEGS

(Patent applied for)

Are made, on special order, for all heights of Italian Flue (without Box Bases), Verona, Perfection, Rococo Ornamental and Plain Radiators, and Rococo Window Radiators.

These legs can be furnished in any height desired, so that center of supply tapping for one-pipe job will be 4½, 5, 5½, 6, 6½, 7, 7½, 8, or 8½ inches from floor.

The Aetna Flue Radiators can also be furnished with Detachable High Legs, to make distance from floor to center of supply tapping on one-pipe job, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 8½, or 9 inches.

These legs are detached and shipped separately, thus removing possibility of breakage.

In ordering Radiators having Detachable Legs, always give distance from floor to center of what is to be the supply tapping of radiator; and when for Steam Radiators, be sure to state whether for one or two-pipe job.

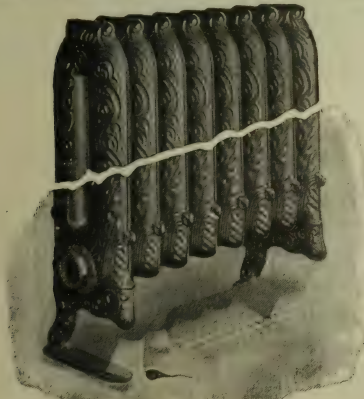


**B3332**  
**Detachable High Legs**  
See List B3785

## CARPET-FEET RADIATORS

Furnished for all heights of Perfection Steam Radiators. Carpet feet increase distance from floor to center of supply tapping to 6½ inches for single-pipe Steam; supply 7 inches, return 6½ inches, for double-pipe Steam; 7 inches, either supply or return, for Water.

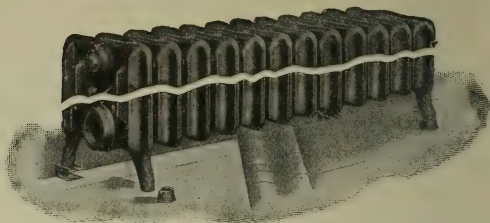
Also furnished for all heights of Detroit Plant Rococo Three-Column Radiators for Steam and Water; distance from floor to center of single-pipe Steam tapping, 5 inches; for two-pipe Steam, 5½ inches supply, 5 inches return; for Water, 5½ inches, either supply or return.



**B3836**  
See Price List B3785



## RADIATOR "FOOT-UPS"



B3840

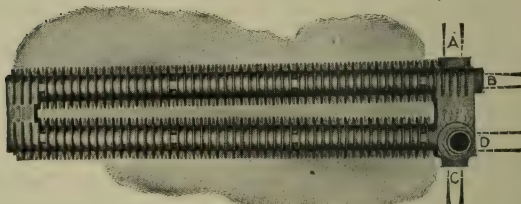
Showing its application to a low Radiator of the National Four Column pattern, and illustrating the method of taking up a carpet without changing anything but one of the Foot-ups at a time. The advantages of these little conveniences are as follows: Very neat in appearance; easily adjusted; save time and money; do away with radiator boards; save cutting carpet or displacing the radiator to take up the carpet. These Foot-ups set the radiator up from floor  $1\frac{1}{2}$  inches.

Per set of two pieces:

Plain.....	.25
Nickel plated.....	.40

## EXCELSIOR INDIRECT RADIATORS

For Steam and Water



B3842

See Price List B3780

## Excelsior Indirect Steam Section—Showing Special Tappings

Length of Excelsior Indirect Steam Section, 36 inches. Excelsior Indirect Hot-Water Section, 36 $\frac{1}{4}$  inches. Height, 8 inches.

Width occupied in stack, 3 $\frac{3}{8}$  inches; or, when specially ordered connected with extra long nipples, to give additional air area between sections, 3 $\frac{3}{8}$ , 3 $\frac{7}{8}$ , 4 $\frac{1}{8}$ , and 4 $\frac{3}{8}$  inches. Each section contains 12 square feet of heating surface in both Steam and Hot Water. Sections are shipped separately unless otherwise ordered; when ordered assembled are shipped in stacks of 5 or 6 sections.

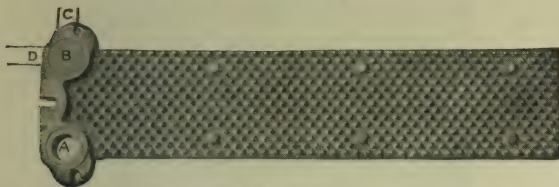
Connected with extra heavy  $1\frac{1}{2}$ -inch right and left-hand threaded nipples, having hexagon nut at the center.

Regular tapping is  $1\frac{1}{4}$ -inch; supply tapping has right-hand thread; return tapping, left-hand thread.

If location of tapping is desired other than regular, we can furnish special tapings as shown above: "A,"  $1\frac{1}{2}$ -inch tapping or smaller; "B,"  $1\frac{1}{4}$ -inch tapping or smaller; "C,"  $1\frac{1}{4}$ -inch tapping or smaller; "D,"  $1\frac{1}{4}$ -inch tapping or smaller.

## PERFECTION PIN INDIRECT RADIATORS

For Steam and Water



Standard Section—B3844

10 square feet of heating surface to the section, with flange and bolt connections. See price list B3780. Length,  $36\frac{1}{4}$  inch; height,  $7\frac{1}{2}$  inch: at connections,  $11\frac{1}{2}$  inch. Width occupied in stack,  $2\frac{3}{4}$  inch, can be increased to 3 inch by making with extra heavy bosses.

## "Extra Large" Sections—B3846

15 square feet of heating surface to the section. With flange and bolt connections. See price list B3780. Length,  $36\frac{1}{4}$  inch; height,  $11\frac{1}{2}$  inch: at connections,  $15\frac{1}{2}$  inch. Width occupies in stack,  $2\frac{3}{8}$  inch, or can make with extra heavy bosses adding  $\frac{1}{4}$  inch or  $\frac{1}{2}$  inch to space.

Both "Standard" and "Extra Large" sizes are tapped 2 inches, and unless otherwise ordered will be bushed according to list B3787.

All openings will have right-hand threads unless otherwise ordered.

If location of tappings is desired other than regular, as shown by "A" in cut, we can furnish special tappings at "B," 2 inches or smaller; "C,"  $1\frac{1}{4}$  inches or smaller; "D,"  $1\frac{1}{4}$  inches or smaller. Can also furnish same special tappings at reverse end of stack if desired.

Length,  $36\frac{1}{4}$  inches. Height,  $7\frac{1}{2}$  inches. Height at connecting point,  $11\frac{1}{2}$  inches. Width each section occupies in stack,  $2\frac{3}{4}$  inches, or when specially ordered, this can be increased  $\frac{1}{4}$  inch, to give additional air area between sections, by furnishing sections with heavy bosses.



B3848

With Right and Left-  
Hand Threaded  
Hexagon Center  
Nipples.

See Price List B3780

These threaded nipple sections are same sizes as the flange sections, viz: 10 and 15-foot. Length, height and thickness in stack is the same as B3844 and B3846, but height at connecting point is  $9\frac{1}{8}$  inches for the Standard size, and 14 inches for the Extra Large size. The width each section occupies in stack can be increased  $\frac{1}{4}$  inch,  $\frac{1}{2}$  inch,  $\frac{3}{4}$  inch, or 1 inch by using special nipples.

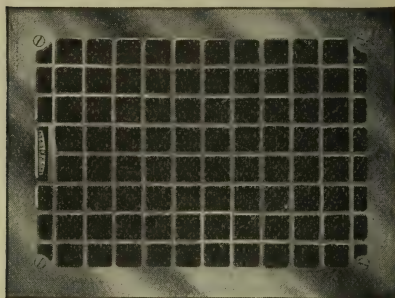
Sections are shipped separately unless otherwise ordered; when ordered assembled are shipped in stacks of 5 or 6 sections.

"Standard" and "Extra Large" sizes are tapped 2-inch, and unless otherwise ordered, will be bushed in accordance with list B3787.

Openings will have 2-inch right-hand tapping on one side and 2-inch left-hand tappings on the other. Connected with extra heavy 2-inch right and left-hand threaded hexagon nipples. When tappings are bushed to smaller sizes, the inside tappings in bushings will be right-hand unless otherwise ordered.

If location of tapping is desired other than regular, we can furnish these radiators, when specially ordered, in the "Extra Large" size with special tappings at "A," "B," "C" and "D," 2 inches or smaller; the "Standard" size can be tapped 2 inches or smaller at "A" and "B," and  $1\frac{1}{4}$  inch or smaller at "C" and "D." These indirects can also be furnished with same special tappings at reverse end of stack, if desired.

## REGISTERS



B3860

Black Japanned				Nickel Plated, Also Bronzed, Gold, Silver Copper and Bronzed Finish			Electro Plated, Brass Bronze or Copper		
Open- ing Inches	Regis- ter Each	Register Face Each	Floor Border Each	Reg'er Face Each	Register Face Each	Floor Border Each	Regis- ter Each	Register Face Each	Floor Border Each
8× 8	1.60	1.05	1.20	3.00	2.45	2.60	3.70	3.15	3.65
×10	1.65	1.10	1.25	3.15	2.60	2.75	3.85	3.30	3.90
×12	1.90	1.30	1.50	3.65	3.05	3.25	4.40	3.75	4.40
9×12	2.10	1.45	1.65	4.00	3.35	3.55	5.10	4.45	5.00
10×12	2.40	1.70	1.75	4.40	3.70	3.75	5.50	4.80	5.35
×14	3.15	2.20	2.20	5.25	4.30	4.30	6.55	5.60	6.00
×16	4.85	2.95	2.95	7.20	5.30	5.30	8.60	6.70	7.20
×18	6.70	3.70	3.70	9.45	6.45	6.45	11.00	8.00	8.55
×20	8.90	4.35	4.35	12.00	7.50	7.50	13.80	9.30	9.80
×22	10.40	4.90	4.90	14.50	9.00	9.00	16.50	11.00	11.00
12×15	4.50	2.90	2.90	7.00	5.40	5.40	8.50	6.90	7.60
×16	5.60	3.50	3.50	8.25	6.15	6.15	9.75	7.65	8.25
×18	6.80	3.90	3.90	9.55	6.65	6.65	11.25	8.35	9.00
×24	12.25	5.50	5.50	16.30	9.55	9.55	18.60	12.10	12.35
14×18	9.00	4.50	4.50	12.00	7.50	7.50	18.50	12.00	12.15
×20	9.50	4.80	4.80	13.00	8.50	8.50	20.50	13.00	12.75
×22	10.50	5.00	5.00	14.50	9.00	9.00	22.50	14.50	13.50
16×20	12.35	6.10	6.10	16.55	10.30	10.30	24.60	16.00	14.00
×22	14.75	6.70	6.70	19.50	11.50	11.50	28.00	18.00	16.00
×24	15.00	7.00	7.00	20.00	12.00	12.00	29.60	19.25	17.10
×28	24.60	10.00	10.00	30.80	16.20	16.20	35.00	22.75	18.80
×30	27.90	11.00	11.00	35.00	18.25	18.25	37.50	25.00	21.60
×32	31.00	13.10	13.10	38.25	20.35	20.35	42.00	27.50	22.00
×36	36.00	16.00	16.00	45.00	25.00	25.00	50.00	33.00	27.00
18×18	18.50	7.20	7.20	23.75	12.45	12.45	.....	.....	.....
×21	20.50	7.75	7.75	26.00	13.25	13.25	.....	.....	.....
×24	21.50	8.35	8.35	27.75	14.60	14.60	.....	.....	.....
×27	27.50	10.75	10.75	35.00	18.25	18.25	.....	.....	.....
×30	31.25	13.25	13.25	38.00	21.00	21.00	.....	.....	.....
×36	38.00	17.25	17.25	48.50	28.10	26.00	.....	.....	.....

Other sizes quoted on application.

# ANGLE RADIATOR VALVES (STEAM)



B3900

## UNION VALVES WITH WOOD WHEEL AND JENKINS DISC

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough body, plated all over..	3.20	3.80	4.75	6.40	8.10	13.10
Rough body, plated trimmings	3.00	3.75	4.65	6.25	8.00	12.85
Rough body, finished trimmings	2.75	3.50	4.30	5.85	7.75	12.60
Finished body.....	3.20	4.00	4.80	6.40	8.75	13.85
Finished body, plated all over.	3.25	4.25	5.25	7.00	9.25	14.35

For Loose Key Valves use same list. Valves without Unions quoted on application.  
Valves with Brass Discs quoted on application.



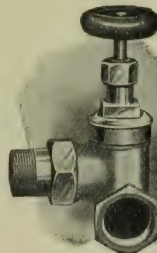
B3901

Right-Hand Valve

Threaded-Right-Hand on Union  
Right-Hand on Bottom

## CORNER RADIATOR VALVES

(STEAM)



B3902

Left-Hand Valve

Threaded-Right-Hand on Union  
Right-Hand on Bottom

## UNION VALVES WITH WOOD WHEEL AND JENKINS DISC

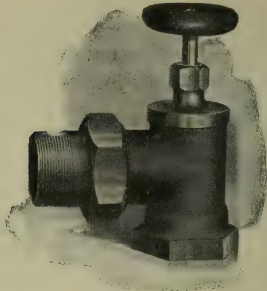
Size.....Inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough body, plated all over,.....	4.20	5.25	7.05	8.95	14.45
Rough body, plated trimmings.....	4.15	5.15	6.90	8.80	14.15
Rough body, finished trimmings.....	3.85	4.75	6.45	8.55	13.85
Finished body, plated all over.....	4.85	6.00	7.80	9.95	15.95

For Loose Key Valves use same list. Valves without Unions quoted on application.  
Valves with Brass Discs quoted on application.



HOT WATER RADIATOR VALVES

QUICK OPENING



B3903

UNION VALVES WITH WOOD WHEEL

Sizes .....inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough Body, plated all over...each	2.85	3.65	5.05	7.10	10.85
Rough Body, plated trimmings. "	2.60	3.35	4.90	6.65	10.25
Rough Body, finished trimmings. "	2.45	3.25	4.50	6.50	10.00
Finished Body..... "	3.00	3.85	5.25	7.50	11.50
Finished Body, plated all over.. "	3.40	4.30	5.80	8.10	12.35

Valves without Wheel for **Key** quoted on application.  
Valves without **Union** quoted on application.  
**Straight Valves** can be furnished from factory at special price.

BRASS UNION ELBOWS

FOR HOT WATER RADIATORS



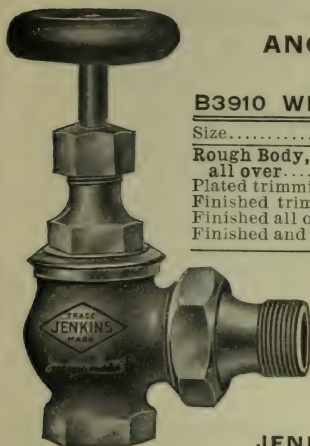
B3904

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough Body, plated all over...each	1.75	2.00	2.50	3.20	4.00	7.00
Rough Body, plated trimmings. "	1.65	1.90	2.40	3.10	3.85	6.15
Rough Body, finished trimmings. "	1.50	1.75	2.25	2.95	3.70	6.00
Finished all over..... "	.....	2.20	2.75	3.60	4.60	7.50
Finished and plated all over.... "	2.25	2.40	3.00	3.90	4.85	8.50

# JENKINS BROS. ANGLE RADIATOR VALVES STEAM

## B3910 WITH WOOD WHEEL AND UNION

Size.....inches	½	¾	1	1¼	1½	2
Rough Body, Plated all over.....	3.15	3.90	4.70	6.25	8.15	13.00
Plated trimmings.....	3.05	3.80	4.60	6.15	8.05	12.90
Finished trimmings....	2.75	3.50	4.30	5.85	7.75	12.60
Finished all over.....	3.20	4.00	4.80	6.40	8.75	13.85
Finished and Plated...	3.60	4.40	5.20	6.80	9.15	14.25



For Loose Key Valves use same list.  
Valves without Unions quoted on application.

Can be furnished with female unions if desired.

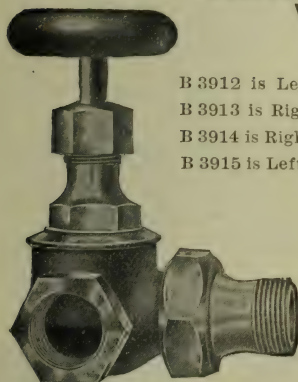
# JENKINS BROS. CORNER RADIATOR VALVES STEAM

B 3912 is Left Hand Offset Pattern

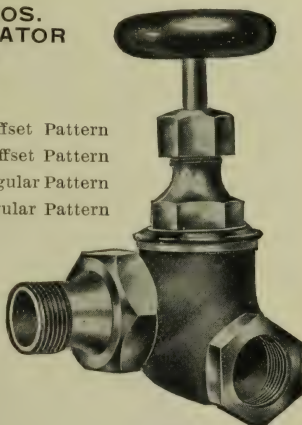
B 3913 is Right Hand Offset Pattern

B 3914 is Right Hand Regular Pattern

B 3915 is Left Hand Regular Pattern



Right Hand Corner  
Regular Valve



Left Hand Corner  
Offset Valve

For One Pipe Jobs we recommend the Offset Pattern Valves.

## GENUINE JENKINS VALVES WITH WOOD WHEEL AND UNION

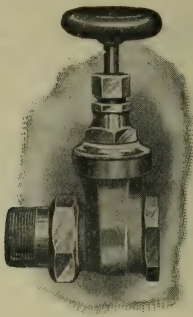
Size.....inches	½	¾	1	1¼	1½	2
Rough body, plated all over ....	3.45	4.25	5.15	6.95	8.95	14.25
Rough body, plated trimmings.....	3.35	4.15	5.05	6.85	8.85	14.15
Rough body, finished trimmings....	3.05	3.85	4.75	6.45	8.55	13.85
Finished all over.....	3.50	4.40	5.30	7.05	9.65	15.25
Finished and plated all over.....	3.90	4.80	5.70	7.45	10.05	15.65

For Loose Key Valves use same list.

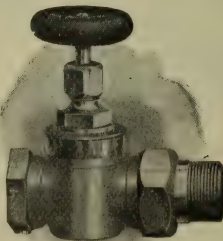
Valves without Unions quoted on application.

**UNION BRASS GATE VALVE**

Wood Wheel. Water or Steam

**B 3916**

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
<b>Rough Body, Nickel Plated all over, each.....</b>	3.10	3.75	4.65	6.10	7.85	12.10
<b>Rough Body, Finished Trimmings, each.....</b>	2.75	3.35	4.20	5.50	7.25	11.35
<b>Price without Union</b>						
<b>Rough Body, Nickel Plated all over, each.....</b>	2.00	2.60	3.45	4.70	6.35	9.80
<b>Rough Body, Finished Trimmings, each.....</b>	1.70	2.25	3.05	4.25	5.85	9.05
<b>Finished all over, each.....</b>	2.65	3.25	4.50	6.00	7.50	12.00
<b>Finished and Plated all over, each...</b>	2.95	3.60	4.90	6.45	8.00	12.75

**SPECIAL UNION RADIATOR VALVES****Radiator Globe Valve****B 3918****Straight Hot Water Valve****B 3919****Radiator Key Valve****B 3920**Jenkins Disc Valves, use list **B3900.**Genuine Jenkins Valves, use list **B 3910.****Hot Water Valves, use list B3903.**

Valves Without Union quoted on application.

## UNIQUE WATER RADIATOR VALVE



B3922

Sizes, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$
Center of body to end of spud.....	$2\frac{7}{8}$ "	$2\frac{7}{8}$ "	$3\frac{1}{16}$ "	$3\frac{5}{16}$ "
Inside dimensions of couplings to radiators.....	$1\frac{1}{4}$ "	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	$1\frac{15}{16}$ "
Distance from center top opening of elbows to bottom of elbows.....	$1\frac{7}{8}$ "	$1\frac{7}{8}$ "	2"	$2\frac{1}{2}$ "
List prices.....	4.25	5.40	5.80	7.95

The Valve provides an interchangeable flow and return connection at one end only of the hot water radiator, and thus wonderfully simplifies water heating outfits. Its use saves fitter's labor, elbow, pipe and fittings otherwise necessary in making connection to return end of the radiator. The use of the Unique Valve also saves the cutting of joists, and extra cutting and boring of floors so objectionable to architects and owners. This Valve permits location of radiators in restricted floor space, where it could not go if connected at both ends.

One-sixth of a turn of the handle fully opens or closes the Valve. When the gates are open, all the water is forced to circulate through the radiator. When the gates are closed, the radiator is shut off and the water flows through a by-pass in the Valve body, the full area of the pipes. Any radiator may therefore be shut off without preventing a constant circulation throughout the entire system.

As there is only one connection to make when this Valve is used, measurements and "roughing-in" work can be done with absolute accuracy. If necessary at any time to alter size of the radiator, no repiping is required, no new holes bored, no floors torn up.

The Unique Valve is made of best materials; all nuts and other parts subject to strain are extra heavy. Both elbows are adjustable so that connections to risers or stubs can be run in any desired direction. A diaphragm extending into the Radiator wholly across the waterway of the first section forces all the water up through the top connections, downward through the other sections, insuring freedom from counter currents and increasing the rapidity of circulation. Thus radiators yield their highest percentage of efficiency when Unique Valves are used. Send for special circular containing full description and interior views.



**ALLEN PACKLESS RADIATOR VALVES**

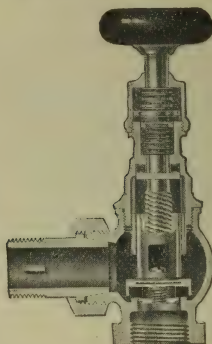
Quick Opening

Ball Bearing

WITH COMPOSITION DISC

Made in  
Angle Pattern  
as illustrated

Also  
Corner Pattern  
Right or Left

**B3923****ANGLE VALVE**

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough Body, Plated all over...each	3.15	3.90	4.70	6.25	8.15	13.00

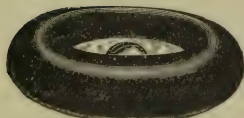
**CORNER VALVE, OFFSET PATTERN**

Size.....inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough Body, Plated all over...each	3.45	4.25	5.15	6.95	8.95	14.25

Special descriptive circular furnished on application.

**WOOD WHEELS****No. 1 KEY****No. 2 KEYS**

For  $\frac{3}{4}$ -in. to 2-in. Valve

**B3925**

Wheels only, each.... .04  
Plates " pair.... .16  
Screws " each.... .04

**B3926**

Rough, each..... .18  
Nickeled, each..... .25

**B3927**

Rough, each..... .50  
Nickeled, each..... .70

When ordering **Wheels** or **Plates**, state name of maker of valve if possible, size and style of valve, diameter of plate and size and shape of hole in plate, and dimensions and number of threads to inch on screws. It is best to furnish samples if possible.

**COMPRESSION AIR VALVES**

Nickel Plated

**WITH WOOD WHEEL****WITH LOOSE KEYS****B3930**

$\frac{1}{8}$ -inch Valve, each..... .25

**B3931**

$\frac{1}{8}$ -inch Valve, each..... .25  
Extra Key, each..... 8

## PLAIN VALVE



B3933

Per dozen, \$7.50.

### DRIP CUP



B3934

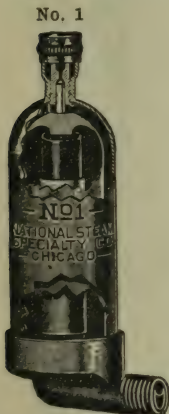
Per dozen, \$2.00.

**JENKINS BROS.**  
**AUTOMATIC AIR VALVES**

Nickel Plated

Valves with ⅛ inch Union on Outlet .....	dozen
" " " " " "	"
<b>.....dozen</b>	<b>9.50</b>
<b>.....dozen</b>	<b>10.00</b>

## OUR SPECIAL AUTOMATIC AIR VALVE



B3935

Each, \$1.35.

With Heat Controller, special.



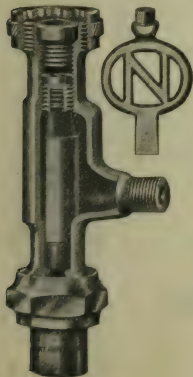
B3936

Each, \$1.25.



B3937

Each, \$1.50.



**NATIONAL-PAUL  
AUTOMATIC AIR VALVES**

B3938

Each, \$1.25.

## PERFECTED DUPLEX RADIATOR AIR VALVES

No. 6



B3940

Each, \$2.00.

No. 7, VACUUM



B3941

Each, \$2.00.

WITH FOUR-WAY DRAIN

No. 6  
Improved

B3942

Each, \$2.00.

No. 7  
Improved

B3943

Each, \$3.00.

Nos. 7 and 7 Improved have Heat Controller. No. 6 Improved and No. 7 Improved have 4-way drain attachment.

Monash-Paul  
Automatic Air  
Valve

B3948

Each, \$2.00.

No. 1



B3944

Each, \$1.50.

No. 2  
With Heat  
Controller

B3945

Each, \$2.00.

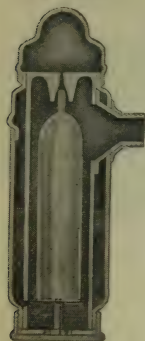
No. 3  
For  
Indirects

B3946

Each, \$1.50.

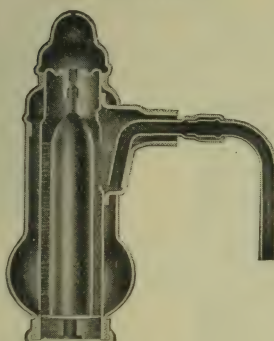
## NORWALL AUTOMATIC AIR VALVES

Regular



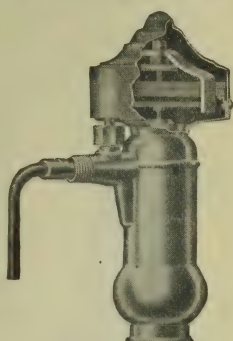
B3950

With Syphon



B3951

Vacuum with Syphon



B3952

Price each, as  
illustrated... .. 1.30  
With Drip Pipe  
attachment ..... 1.60

Price each, as  
illustrated..... 1.70  
With Drip Pipe  
attachment..... 2.00

Price each, as  
illustrated..... 4.00  
Can be furnished with-  
out syphon attachment if  
desired.

## THE "NORWALL" HOT WATER AIR VALVE

B 3954

Similar in design to B3950, except has thumb screw on top by which valve can be closed if desired. Price each ..... 1.80



## MARSH-PAUL AUTOMATIC AIR VALVE

B3955

Each ..... 1.25





# THE POWERS REGULATOR

For House Heating Boilers and Furnaces



B3968

The Thermostat, centrally located in the living rooms, controls, through the diaphragm motor shown below, the drafts of the heater. Maintains a uniform temperature, and saves fuel.

Diaphragm Motor of No. 2 Regulator for hot water or hot air furnace. Regulates fire from temperature in room.

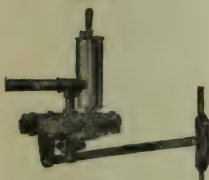
Price complete, with Thermostat ..... 40.00

No. 2



B3969

No. 3



B3970

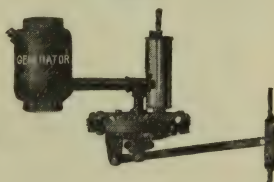
Diaphragm Motor of No. 3 Regulator for low pressure steam heater. Regulates fire from room temperature, also limits steam pressure.

Price complete, with Thermostat ..... 45.00

No. 4

Diaphragm Motor and Generator for No. 4 Regulator for hot water boiler. Regulates fire from room temperature, also limits the temperature of water so heater cannot boil over.

Price complete, with Thermostat ..... 50.00



B3971

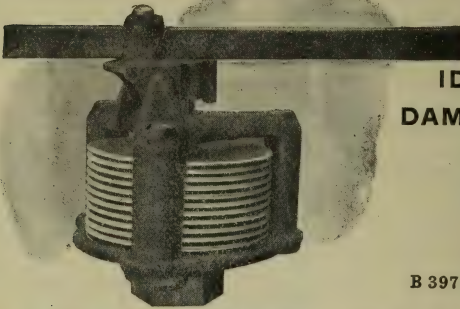


B3972

Check Damper should always be used on smoke pipe; greatly increases the efficiency of Regulator.

All sizes, 6 inch to 12 inch, price..... 1.25 to 1.75

Always give size of smoke pipe in ordering Regulator.



## IDEAL SYLPHON DAMPER REGULATOR No. 22

For Steam Boilers

B 3971½. Price each ..... 20 00

(Protected by American and Foreign Patents. U. S. Patents June 2, 1903; June 16, 1903; May 24, 1904, and other applications pending.)

It is composed entirely of metal; is frictionless, is sensitive to the last degree; is positive and invariable in its action, and will not deteriorate with age.

It works just below atmospheric pressure, closing the dampers, if desired, before one ounce of steam pressure is generated. By shifting the counterpoise weight one can change its application from below atmospheric pressure to any pressure desired and maintain good draft control.

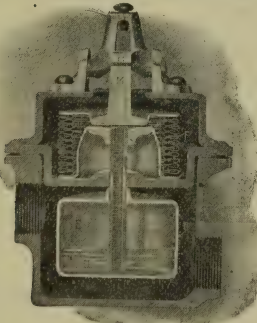
The regulating device is made upon the bellows plan and is formed of two brass discs with accordion sides, made of steam brass of the best quality.

The bellows is fed by a 1-inch opening in the bottom plate 5¼ inches in diameter.

## IDEAL SYLPHON REGULATORS, Nos. 42, 43, 44

For Water Boilers and Tank Heaters

B 3972½. Price each ..... 25.00



(Protected by American and Foreign Patents. U. S. Patents June 2, 1903; June 16, 1903; May 24 1904, and other applications pending.)

These Regulators contain no perishable diaphragm, piston cylinder, packing valves or sliding joints. They are absolutely self-contained and require no auxiliary power, such as electricity or compressed air, to aid their operation. They are constructed entirely of metal and therefore never require repacking or new diaphragms as in the case of ordinary regulators.

The counterpoise weight may be set to accurately maintain the degree of water temperature desired. It is a simple, durable and reliable draft Regulator which will minutely adjust the dampers of a boiler at the slightest variation of temperature in the water.

NOTE.—When the flow main from the Water Boiler is larger than 1¼ inch, the Regulator is installed by connecting it between the flow and return mains with 1¼-inch pipings. When the flow main is 1¼ inch or less (frequently the case with Tank Heaters), the Regulator is simply connected direct to the flow pipe.

Regulators Nos. 42, 43 and 44 are all similar in construction, the only change being in the chemicals (for liquid D in cylinder C) necessary to regulate the Heater in accordance with the variations of temperature, running from 120° to 240°.

No. 42 Regulator,	for water temperatures running	120° to 180°
No. 43     "     "     "     "     "     "		160° to 220°
No. 44     "     "     "     "     "     "		190° to 240°

The number of each Regulator is cast in raised figures on the shell.

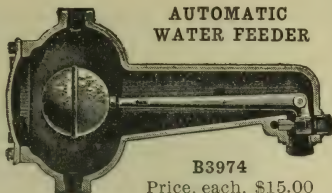
Height 7 inches; diameter, 5 inches; weight, complete with lever and counterpoises, 28 pounds; shipping weight, boxed, 35 pounds. The Regulator is furnished complete, with 12 feet of plumber's chain and 4 S hooks.

**LOW PRESSURE DAMPER  
REGULATOR**



**B3973**  
Price, each, \$10.00

**AUTOMATIC  
WATER FEEDER**

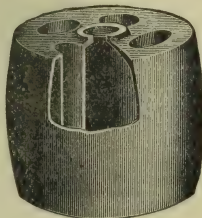


**B3974**  
Price, each, \$15.00

**AUXILIARY WATER HEATER**  
**B3975**

Price, each, \$10.00

For use in the firepot of Hot Air Furnaces or Stoves. Width, 10¼ inches; height, 8¼ inches. Tapped top and bottom for 1½ inch pipe. Capacity, 140 square feet of direct radiation, about 170 gallons tank capacity.



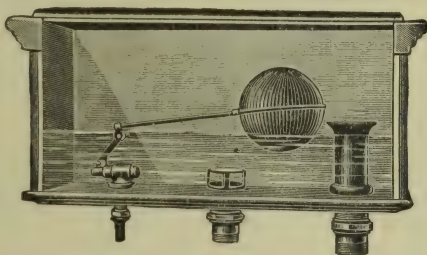
**GALVANIZED**

**EXPANSION  
TANKS**



**B3976**

**WOOD, AUTOMATIC**



**B3977**

**GALVANIZED EXPANSION TANKS — Less Gauge**

Capacity .....	gallons	5½	8	10	12	15	18	20	24
Price (less Gauge).....each		6.50	7.50	8.00	8.50	9.00	9.50	12.50	13.00
Diameter.....inches		9	10	12	12	12	12	14	14
Height....."		20	20	20	24	30	36	30	36
Suitable for Radiation...sq. feet		150	250	350	450	550	650	700	850
Capacity.....	ga'lons	26	32	42	66	82	100	120	.....
Price.....each		14.00	15.00	16.50	31.00	37.00	51.00	58.00	.....
Diameter.....inches		16	16	16	18	20	22	24	.....
Height....."		30	36	48	60	60	60	60	.....
Suitable for Radiation.....sq. feet		900	1,250	1,750	2,750	4,500	6,000	7,500	.....

Water Gauge is extra, \$3.00.

**WOOD, AUTOMATIC EXPANSION TANKS**

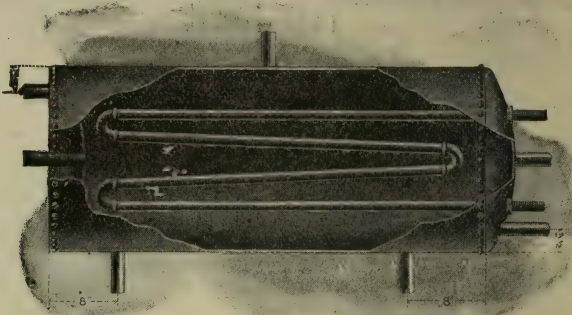
Price, Beaded; Plain Oak Varnished, with couplings.....each	8.50
" Rounded Corners; Plain Oak Varnished, with couplings ....."	9.00

Walnut or Quarter Sawed Oak extra, \$1.25.



# STEEL STORAGE TANKS

With or Without Coil



B3978

Showing location of Tank tappings, vertical or horizontal.  
Coil openings vary according to size and shape of coil.

Capacity Gallons	Diameter, Inches	Length, Feet	Approximate Weight, Pounds	Prices of Tanks Only		Size of Coil	Coils Built in Tanks		
				Plain	Galvanized		Price Plain Coil	Prices Galvanized Coil	Price Brass Coil
66	18	5	220	\$ 48.00	\$ 60.00	4—Pipes 1"	\$ 11.00	\$ 13.00	\$ 30.00
85	20	5	250	50.00	63.00	4—Pipes 1"	11.00	13.00	30.00
100	22	5	280	52.00	67.00	4—Pipes 1"	11.00	13.00	30.00
120	24	5	320	55.00	72.00	4—Pipes 1 1/4"	14.00	16.00	40.00
145	24	6	360	58.00	78.00	4—Pipes 1 1/4"	15.00	17.00	45.00
170	24	7	400	61.00	83.00	4—Pipes 1 1/4"	16.00	18.00	40.00
180	30	5	480	64.00	90.00	4—Pipes 1 1/4"	14.00	16.00	40.00
215	30	6	540	70.00	98.00	4—Pipes 1 1/4"	15.00	17.00	55.00
250	30	7	590	75.00	105.00	4—Pipes 1 1/4"	16.00	18.00	50.00
290	30	8	640	80.00	112.00	4—Pipes 1 1/4"	17.00	19.00	55.00
315	36	6	780	92.00	126.00	4—Pipes 1 1/2"	18.00	21.00	56.00
365	36	7	810	102.00	136.00	4—Pipes 1 1/2"	19.00	22.00	62.00
420	36	8	880	112.00	149.00	4—Pipes 1 1/2"	20.00	23.00	68.00
525	36	10	980	120.00	168.00	4—Pipes 1 1/2"	22.00	25.00	80.00
430	42	6	1150	116.00	.....	4—Pipes 1 1/2"	18.00	21.00	56.00
575	42	8	1400	130.00	.....	4—Pipes 1 1/2"	21.00	24.00	68.00
720	42	10	1650	146.00	.....	4—Pipes 1 1/2"	24.00	27.00	80.00
865	42	12	1950	167.00	.....	4—Pipes 1 1/2"	27.00	30.00	92.00
1000	42	14	2300	188.00	.....	4—Pipes 1 1/2"	30.00	33.00	104.00
1135	42	16	2650	209.00	.....	4—Pipes 1 1/2"	33.00	36.00	116.00

Subject to discounts.

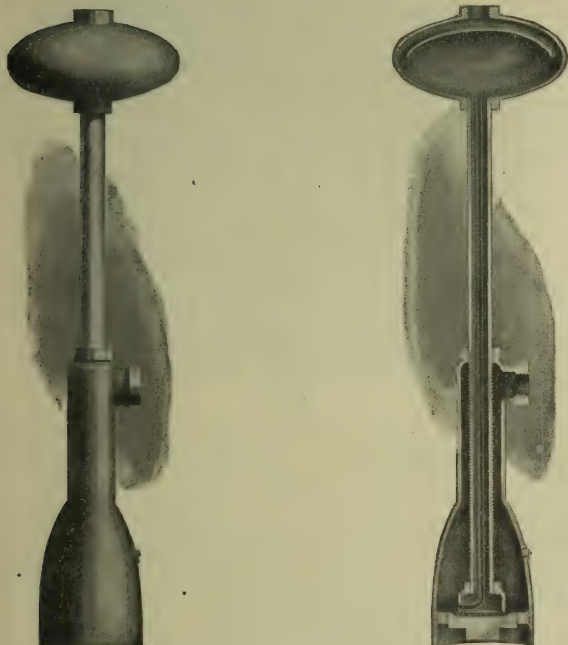
Manhole in head or shell \$7.50 extra, net.

Handhole in head or shell, \$3.50 extra, net.

In ordering, state whether vertical or horizontal tanks are wanted. Unless otherwise ordered, tanks without coils, manholes or handholes will be shipped, and tappings located as illustrated above. Tanks of 180 gallons capacity and under will have openings tapped for 1 1/2 inch pipe; tanks of larger capacity will have openings tapped for 2 inch pipe; no extra charge for more or larger openings than shown in cut.

**HONEYWELL HEAT GENERATORS**

For Water Piping

**B 3980****Prices, Each**

Style 1 for 1500 square feet.....	\$25.00
Style 2 " 2500 " " .....	35.00
Style 3 " 3500 " " .....	50.00

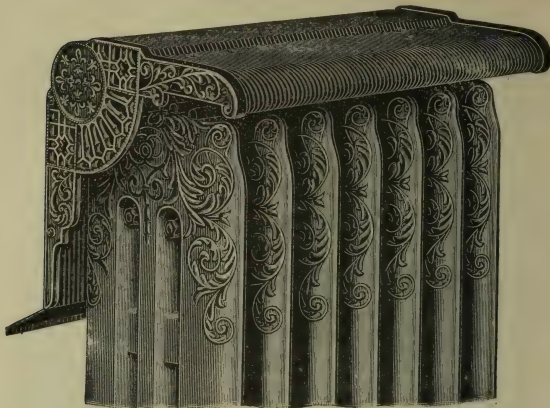
These Generators are designed to meet the demand for a device to quicken the circulation in hot water heating jobs. When connected to the piping of an ordinary gravity plant this Generator seals the circuit and permits the generation of a slight pressure up to ten pounds, at which point it relieves itself through the operation of a mercury seal, eliminating the element of danger. The tendencies of this slight pressure are: First, to increase the circulation; second, to widen the range of temperatures to a point equal to that of steam; third, to accomplish an economy in fuel.

The pressure created by this Generator is calculated to force the water through any part of a defective piping system where the circulation is sluggish under ordinary gravity conditions. It is simple to install and is applicable to both old and new heating plants.

Sectional outline view herewith shows mercury seal, connections to system, equalizing pipe and deflecting plate.

Approximate weights: style 1, 35 lbs.; style 2, 45 lbs.; style 3, 55 lbs.

## THE "ACME" RADIATOR SHIELD



B3987

Price per inch of length.

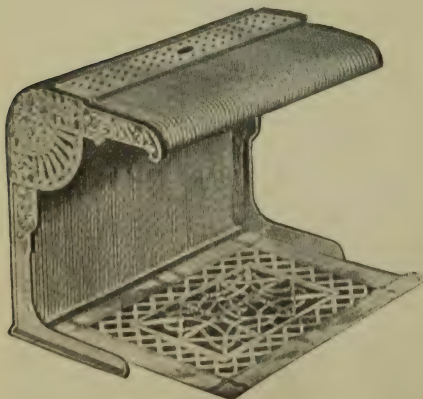
Plain, per inch..... .20

Bronzed, per inch..... .25

### Directions for Ordering

When ordering Acme Shields, state whether for Steam or Water Radiator. State the pattern of radiator, whether One, Two, Three, or Four Column, the name of the radiator, and how many sections in the radiator. To avoid mistakes it is advisable to state length of radiator over all from end to end and the width of the sections from front to back at the top. State distance from finished wall (not base-board) to radiator. If extension to floor is wanted state height of radiator.

### STYLE 2



## ACME REGISTER SHIELD

B3989

Style No. 2 with Water Pan or Air Moistener on top as illustrated.

Style No. 1 is without the Air Moistener.

Prices on application.

State dimensions and finish wanted.

## RADIATOR BRONZE AND PAINTS



B3990



B3991

Prices on application.



B3992

### BRONZE

Aluminum, Pale Gold, Rich Gold, Copper, Olive Green, Apple Green, Marine Blue, Sky Blue, Fire (Red), Lemon. All in one pound cans.

**Bronzing Liquid** in one gallon cans.

**Maroon Japan** in one-half gallon cans.

### RADIATOR ENAMELS

Put up in One Gallon, Half Gallon, Quart, and Pint Cans.

#### Colors

Alabaster  
Azure Blue  
Light Pink  
Oak Brown  
Light Drab

Ebony (or black)  
Apple Green  
Gobelin  
Silver Gray  
Blue Tint

Lilac  
Cream  
Terra Cotta  
Nile Green  
Bronze Green

Turquoise  
Forget-Me-Not  
Palm Green  
Crimson  
Scarlet

Old Ivory  
Lemon  
Buff  
Lavender  
Peach Blow

Sea Green

Gray Tint

### FITCH BRUSHES



B3993

We are prepared to furnish best grade Fitch Brushes in any size desired.

Note: Never put a Fitch brush in water, as this causes the block or handle to swell and split. Brushes may be kept in best of condition by immersing in bronzing liquid, turpentine, enamels, etc.

### LONG HANDLE RADIATOR BRUSHES



B3995

The brush illustrated above is specially designed for use on radiators, the shape being such that it will pass between the sections, cleaning surfaces which could not otherwise be reached. These brushes are thoroughly well made, and very serviceable.

Price, each, 75c.

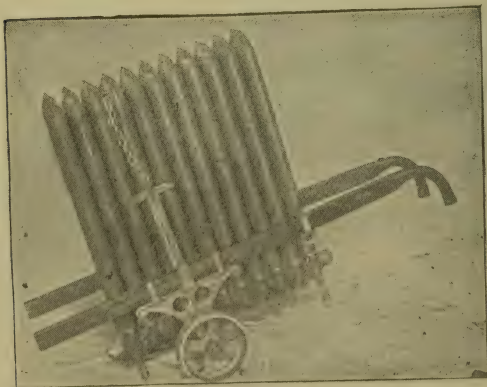


## GREENHOUSE GOODS



B3997

Illustration shows method of heating greenhouses with cast-iron boiler. A wrought shell heater, such as the Wilks, may be used for the same purpose. We are also prepared to furnish **Wrought and Steel Pipe Fittings and Valves**, also **Cast-iron Pipe and Fittings with Hub Joints** for greenhouse purposes. Write for prices, giving us a list of what material is needed.

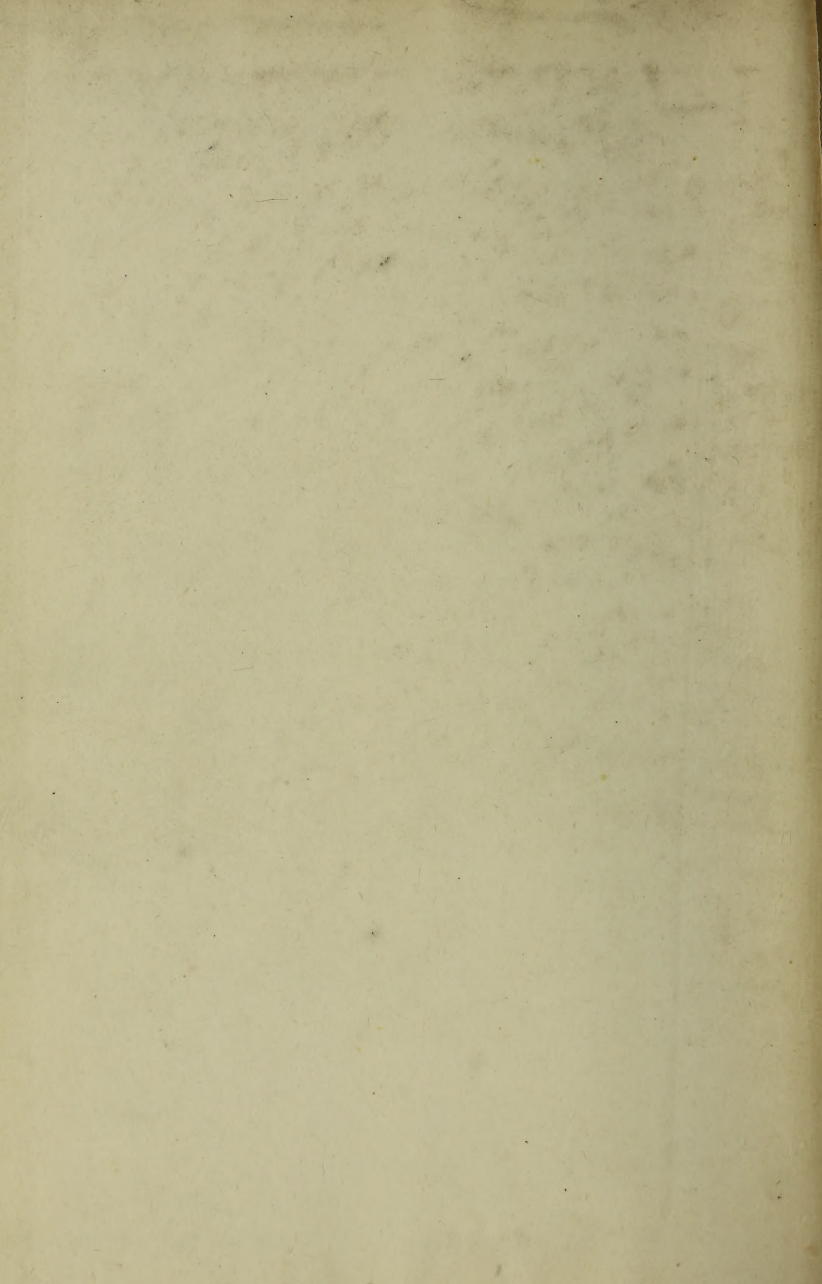

**MASON'S  
RADIATOR  
TRUCK**

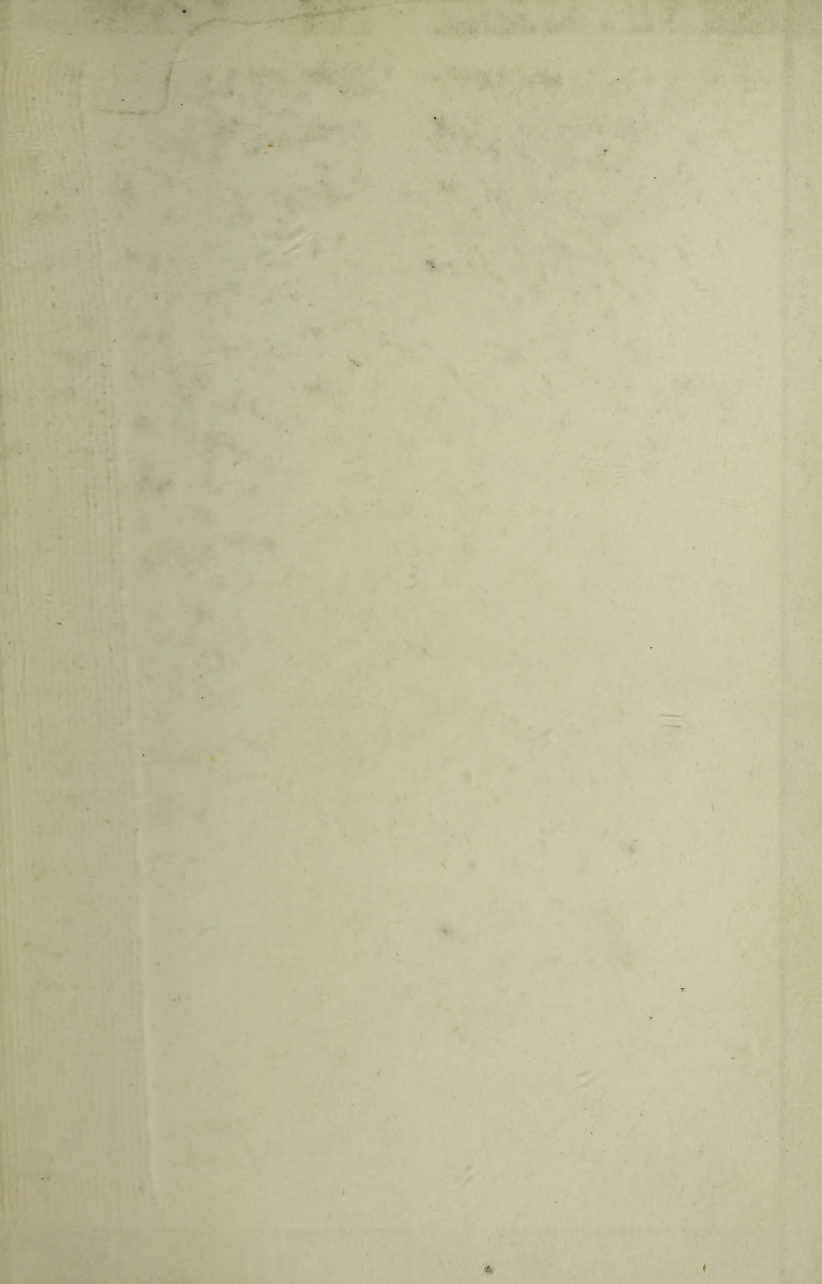
B3999

Price each.....\$18.00

It is the greatest labor-saving device ever invented for the handling of Radiators. It can also be used to an excellent advantage for moving Slate, Stone, Marble, Glass, etc., or anything that has to be carried on edge for safety, or to get through narrow passageways. Its construction is simple and it can be handled with the greatest ease. The wheels are extra large and have wide rubber tires. A boy can load and move a twenty-section radiator with it.









UNIVERSITY OF ILLINOIS-URBANA



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